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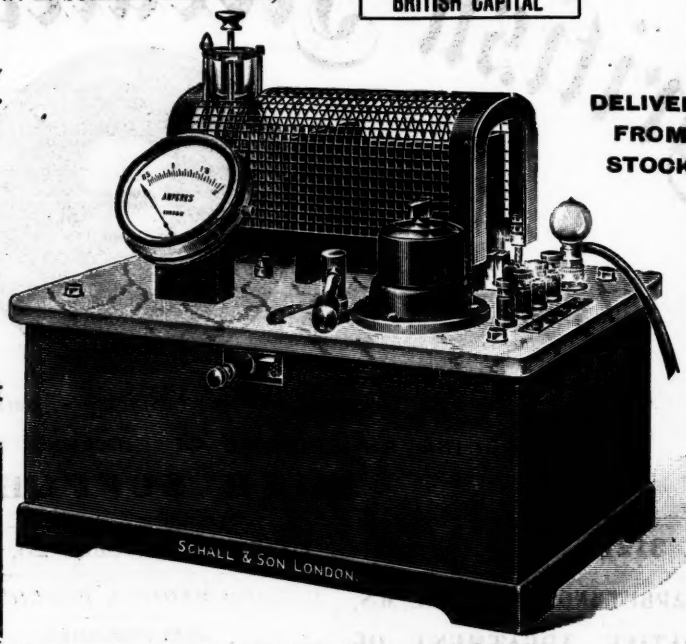

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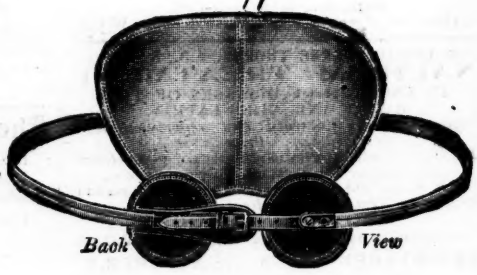

Back View

Harveian Oration

ON THE

BIRTH AND GROWTH OF SCIENCE IN MEDICINE.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, OCTOBER 18TH, 1920,

BY

SIR FREDERICK ANDREWES, M.D., F.R.S., F.R.C.P.,

PROFESSOR OF PATHOLOGY, UNIVERSITY OF LONDON; PATHOLOGIST TO ST. BARTHOLOMEW'S HOSPITAL.

A HARVEIAN orator, in choosing the subject of his discourse, hesitates between two paths. He may seek to elucidate some point in the founder's life or work which has escaped the notice of previous orators, or he may take some wider theme and speak of the spirit in which Harvey carried on his labours. I have not the knowledge to attempt the first of these alternatives, and when, Sir, you did me the great honour of nomination as this year's orator, it was clear to me that I must adopt the second. Many of my predecessors in the office have been more distinguished pathologists than I am, but I believe that this is the first occasion on which the honour has been conferred upon one who is not engaged in ordinary medical practice, but who is a pathologist by profession. I have to thank you, Sir, not only on my own behalf, but even more in the name of the subject which, in all humility, I represent.

The Harveian orator is enjoined to commemorate the various benefactors of this College, but considerable latitude is by custom allowed him as to the manner in which he fulfils this duty. Our College is rich in former gifts of books, pictures, silver, and other valuable and beautiful possessions; our endowments in houses and land have enabled our foundation to carry out its work with ampler means. To all those who have conferred such benefactions upon the College our grateful thanks are due, and if to-day I do not formally recite the long list of names it is because I think that the founder of this oration would himself have been the first to recognize that our intellectual heritage is a treasure of greater worth than material possessions. The great men of the past to whose labours we owe the development of medical science have been benefactors of this College, and of all that it represents, in a nobler sense. Harvey was one, and not the least, among them, and I conceive that I cannot more fittingly honour his memory than by devoting this oration to the inward spirit which has animated the progress of medical science. Many great names stand along the centuries, marking the toilsome and broken road by which our science has reached its present position, and Harvey is worthy of his company.

It is natural that as a pathologist I should take the more purely scientific aspect of medicine as the subject of my discourse, and it will be proper, in the first place, to consider the position which medicine occupies amongst the sciences. We are accustomed to speak of the "art and science of medicine," perhaps without reflecting on where the art begins and the science leaves off. A body of facts in any branch of knowledge, however thoroughly their truth has been established, does not of itself constitute a science. Science lies in the way the facts are treated. They need to be classified and viewed in their mutual relations; then, by appropriate reasoning, it is sought to formulate the general laws which govern the province of nature studied. The aim of science is to discover the "Laws of Nature," and in its truest though narrowest sense it is the pursuit of this knowledge for its own sake, irrespective of any practical use to which it may be put.

The primary aim of medicine is the practical one of healing the sick or preventing disease, and therefore, in the narrower sense, medicine is not a science but an art. Physiology, pathology, and pharmacology are sciences in the strictest sense; medicine is the art of applying the laws established by these sciences to the prevention or cure of disease. More than this, it is the very human art of treating the patient as well as his disease. But in a broader and surely a more natural sense we may regard medicine as a science. Pathology may, it is true, be pursued as an abstract subject, but in real life it is inseparable from medicine. Treatment and prevention are so intimately based upon a right understanding of the nature of disease and of the laws which govern its course that I refuse to separate pathology and medicine. It has too long been the fashion to limit the sphere of pathology to the dead-house and the laboratory; its field is equally at the bedside, and, indeed, I would assert that there is no method of studying the natural history of disease which pathology may not claim as its proper province. By Harvey's injunction I am to admonish you to seek out the truths of Nature by observation and experiment. These are two different ways of pursuing a subject, and, indeed, the concrete sciences have been divided into the "observational" and "experimental"; anatomy is an observational science, physiology an experimental one. The observational sciences long preceded the experimental, and in pathology and medicine, which partake of the nature of both, the experimental method is of late growth.

My aim is to trace, so far as I may in the allotted span of time, the influences which have governed the growth of our knowledge of disease; to pursue them to their beginnings rather than to record their final results. I cannot, indeed, hope to say anything new; I can only endeavour to place before you the facts to be gathered from literature in the way in which they group themselves in my own mind. In the first place, let me consider the conditions necessary to the successful development of a science.

The foremost is *liberty of thought*. Unless man is free to reason from his facts, unhampered by deference to received opinion or tradition, real progress in science is impossible. The history of medicine abounds in evidence of this truth; indeed, Harvey's demonstration of the circulation offers a striking instance. The second condition is *accuracy of observation*, with patient accumulation of the facts which form the building stones of science. The third, widely different from the preceding, is the gift of *imagination*, which can frame a tentative explanation of the observed facts—a rarer faculty in the chastened form demanded by science and, perhaps, a more dangerous one. The two conditions last named are seen united only in exceptional men; they were so in Harvey, who has left a clear record of the mental processes which led him to the truth. In the fourth place comes the verification of hypothesis by *experiment*, in which the conditions are so controlled as to allow of more convincing conclusions than chance observations permit. And governing the whole chain of thought from its first inception there must be present that capacity for severely correct thinking, the rules for which are embodied in *logic*. Let us now see how the history of medical science sheds light on the development of these fundamental conditions.

History has been said to be the story of the influence of great men. It is true that we can associate the more striking advances in medical science with the names of certain individuals who stand out as landmarks in its development, but the course of history is surely swayed by influences deeper than this. A great man is the product of his times. Harvey would not have discovered the circulation had it not been for the labours of his predecessors and the intellectual atmosphere in which he lived. The great man is he who has the vision to combine the scattered facts into a harmonious whole and who can carry conviction to others by the force of his reasoning. I shall have to commemorate such great names standing along the history of medical science, but I shall also be obliged to consider the conditions which produced them.

In his suggestive little book, entitled *The Revolutions of Civilization*, Professor Flinders Petrie has pointed out that culture is an intermittent phenomenon. No civilization in the past has proved permanent, and he estimates the average duration of any given period of culture at about 1,500 years; in Egypt he traces eight such periods.

The downfall is usually brought about by the invasion of a people of lower culture but greater virility, and from the mixture of the old and the new races a new civilization is born, but only after an interval of relative barbarism—a sort of incubation period lasting some hundreds of years. The first phase of the new culture is hampered by imperfect traditions of the past; it is the stage of archaism in art, and in science it is marked by blind reliance on received opinion. In time these trammels are shaken off and the new people enters upon the unfettered exercise of its inborn genius: it acquires intellectual liberty, and now comes the phase of maximum fertility in every branch of human enterprise, lasting perhaps but a century or two, and followed by gradual decadence till the over-ripe civilization is ready to fall. That this has been the course of all the civilizations known to us admits of no dispute, and Professor Flinders Petrie adds the important observation that there is a fairly regular sequence in the development of the various branches of human activity. Art is the first to reach its highest point, and notably sculpture and architecture. Literature

follows later, while science is last of all in its development, and may be delayed for 500 years or more after sculpture has reached its acme. Our own civilization offers confirmation of the truth of these propositions. Science is still rapidly advancing with us, but as a race we are now quite incapable of Salisbury Cathedral, of Magdalen tower, or of King Henry VII's chapel. Consider the recent work at Cambridge on the structure of the atom and then go and look at the statue of Sir Wilfrid Lawson on the Embankment.

But, with all this intermittence, there is none the less an upward movement of civilization as a whole. Each new period of culture is coming to found itself more and more on that which has preceded it. In early times a civilization, when it fell, passed more or less utterly away; its successor had to begin again from the beginning. The invention of writing has profoundly affected the degree to which one period can influence that which comes after it. In spite of all that has been lost our debt to classical antiquity is one that never can be measured, and with the art of printing and the distribution of books over the world it would seem impossible that any important element in our own culture should be lost to our successors when our civilization perishes in its turn.

These considerations are of no little significance in relation to the development of medical science. We are aware of three great periods of civilization in Europe during the past 5,000 years—the Mediterranean or Minoan, with its head quarters in Crete from 3,000 to 1,200 B.C.; the Classical, of which Greece was the intellectual fountain head; and the Modern or Western, in which we are still living.

We know too little of the first of these, at least from the aspect of science, to enable me to say much about it. Medical science, so far as we are aware, began with the ancient Greeks. This statement requires justification, for we know that the older civilizations of Egypt and Babylonia had some acquaintance with medicine, and attained a certain degree of surgical and therapeutic skill. I have spoken of science as an endeavour to formulate the laws of Nature, and as the pursuit of knowledge for its own sake. Now the Egyptians, as Professor Burnet has pointed out, had invented certain practical rules of mensuration, amongst others one which involved the properties of the triangle with sides of 3, 4, and 5 units respectively, but they used their rules empirically. The Greeks took this knowledge and began to study the properties of numbers for their own sake; Pythagoras proved the abstract proposition which we know as Euclid I, 47. The Greeks originated the science of mathematics. Similarly, the Babylonians amassed data concerning the heavenly bodies and arrived at a certain periodicity of eclipses, but they made no attempt, so far as we know, to formulate the laws governing the movements of the sun, moon, and stars. The Greeks absorbed the Babylonian data and began to reason about them; in a few centuries they found out that the earth was round and floated in space, and surmised that it was only a member of a larger system of worlds; they not merely observed, but succeeded in explaining eclipses. They thus founded the science of astronomy. In the same way, as I propose to relate, they laid the foundations of medical science.

The way in which Greek history is usually taught in schools is, to my mind, a deplorable thing. If one takes up a primer on the subject, one finds it a lamentable record of petty strife and treachery, redeemed, indeed, here and there by some noble and heroic action, but conveying little of the marvellous achievements of the Greeks in the realms of thought and art.

What does the Peloponnesian war matter in comparison with the invention of mathematics and logic, with the rise of democracy, the development of the drama, or the idealism of Greek sculpture? By all means teach the schoolboy what Marathon and Salamis meant for the future of European civilization, but teach him, too, the significance of Hellenism in art, literature, and science. The political failures and downfall of the Greeks may well be relegated to a tragic addendum, to warn him that no intellectual brilliancy and freedom can make a nation long successful in the absence of unselfishness and good faith.

I take it that few things have ever happened in the world so wonderful as the relatively sudden intellectual development of the ancient Greeks. Ethnologists tell us that a peculiarly happy accident of racial fusion was largely accountable for their genius. Right through the Bronze Age the dominant race in the Ægean had been that which developed the so-called Minoan culture—a people small in stature, active, and intelligent, and with a highly developed artistic talent. Their civilization was overwhelmed by successive waves of migration from the North; the invaders were of Aryan origin, and represented many different tribes. The Achaeans, known to us from the pages of Homer, were amongst the earlier comers; the Dorians came last, and partly drove out the already half-mingled Achaean and Mediterranean races. The Dorians seem to have contributed little to the intellectual development of future Greece; they remained more or less apart—a military people, of which the Spartans were a type. The effective elements were the Achaean and Mediterranean races; the first contributing to the mixture discipline, order, and self-control, while intellectual acuteness and artistic gifts were brought by the Southern race—a fertile combination for the growth of science. There was a long period of darkness and barbarism, lasting some 400 or 500 years, a dreadful time about which history is silent. In the wreck of the old culture even the art of writing seems to have perished and a new alphabet had to be brought into use. But by 800 or 700 B.C., the new civilization began to dawn, and in the realms of thought the dawn was earliest not on the mainland of Greece but in the more settled countries round the Ægean occupied by the Ionian Greeks.

So far as we are aware the earliest attempts at science began in Ionia, some six centuries before Christ, and the name which I would first commemorate as a spiritual benefactor of this College is that of Thales of Miletus. I might have chosen Empedocles or Pythagoras, but we may let Thales, as the first of the succession of early Greek thinkers, stand as the prototype of the group of men who laid the foundations upon which science was to be built by future generations. Doubtless they had acquired what they might of the lore of older civilizations, but they seem to have been the first to pursue abstract knowledge. Till their day men had been content to accept any foolish myth about the nature of the world and of the things they saw around them. The service which Thales and his successors rendered to mankind was that they rejected all fabulous tales and began to think for themselves how things had become such as they saw, definitely reaching out after the laws which they felt sure must govern nature. Their great contribution to science was to establish that atmosphere of intellectual liberty which rendered science possible. It says much for the liberal spirit of that age that these men, who broke with all the cherished traditions of the past, were not as a rule reviled for impiety, but received universal honour; Thales was accounted one of the Seven Wise Men of Greece.

It is easy for us to smile at the crudity of some of the attempts of these early philosophers to explain Nature. Yet they early realized the permanence and indestructibility of matter, and one of their chief preoccupations was the search after the primary substance out of which they conceived everything to arise. Some identified it with water, some with air; and Empedocles, in the fifth century B.C., is credited with formulating the doctrine of the four elements—earth, air, fire, and water—which was to dominate scientific thought for more than a thousand years. The obvious antagonism between heat and cold, dryness and moisture, early led to the doctrine of "opposites," which became one of the chief tenets of Greek medicine. Even the atomic theory can be traced back to Leucippus of Miletus in the fifth century B.C. This conception, elaborated some four centuries later in the well known poem of Lucretius, is an interesting example of a hypothesis reached by sheer thinking, but remaining barren for two thousand years until established by the experimental method in the hands of Dalton. That marks the difference between the science of the armchair and that of the laboratory.

But let me now consider what the earlier Greeks did for medical science. Medicine of a sort and rude surgery must have been transmitted even through the dark ages, handed down, it is said, by special families, the Asklepiadae, just as the epic tradition was passed along by the Homeridae. Certain rules of surgery and the practices of blood-letting and purgation are known to be of immemorial antiquity, but for the most part the medical practice of those times seems to have been bound up with fetish worship and superstition. There is no evidence that Egypt had any true medical science to impart, and our knowledge of Minoan medicine is limited to the single fact that in the great palace at Cnossus there existed a system of sanitation so good that it was never equalled till the reign of Queen Victoria. We may be quite sure that the inquisitive and receptive Greek mind was quick to pick up what it could from the older civilizations, and then, in accordance with its peculiar genius, it proceeded to develop it out of all recognition. The greatest achievements of the Greeks were not in medical science; other sciences had to develop before medicine could rest upon a proper foundation, but what they did for medicine was no small thing.

Their physicians were usually philosophers, and their philosophers speculated as freely about the functions of the body as they did about the universe. Their physiology naturally reflected their views on science in general. The school of Empedocles identified his four elements with the hot and the cold, the moist and the dry, and loss of balance between these opposites was held to produce disease. Had such crude speculations been all, medicine might have owed little to the earlier Greeks. But there was much more. The Greeks were acute observers, and they began to study and to record the phenomena of disease, grouping and classifying according to the lights of the time; thus medicine entered upon its first scientific stage; it became an observational science. More than this, just as in other matters the philosophers had put away the myths and fairy tales of their ancestors, so, too, in medicine they rejected the magic and fetish worship which had hitherto formed so large a part of practice. This was one of the greatest services rendered by the Greeks to medical science. Not that medicine became altogether dissociated from religion. Æsculapius was

worshipped at numerous temples, and thither the sick were brought to receive such benefit as they might from the rites of the god. But at such health resorts they were also subjected to other influences—careful diet, pure water, rest, and cheerful associations—and when improvement occurred the physicians had the acuteness to perceive that this simple treatment had probably more to do with the result than the religious rites.

This brings me to the second name which I naturally commemorate to-day—that of Hippocrates of Cos—the first great clinician of whom we have any knowledge, and one whose name will always be associated with the phase which Greek medicine had now reached.

When Hippocrates was born, about 460 B.C., observational medicine had attained a considerable pitch of excellence. He doubtless imbibed the teachings of other good physicians who had gone before him, but the veneration in which Hippocrates was held by the Greeks themselves assures us that he was a man of outstanding character and attainments. We can, however, judge of him more directly. It is certain that only a small part of the Hippocratic treatises which have come down to us are from the pen of the master himself, but we may reasonably take them, as a whole, to represent his teaching, and they give us a fair idea of the stage at which the best Greek medical science had arrived in the fifth century B.C. It was a simple and rational medicine based on careful clinical observation and on a watchful study of the results which followed hygienic treatment. The healing powers of Nature formed a leading tenet of the Coan school; we may almost regard Hippocrates as the founder of sanatorium treatment. Perusal of those of the Books of Epidemics which are most certainly by Hippocrates himself shows that he was an admirable case-taker; in the light of our present knowledge we can readily make a diagnosis from many of his descriptions. His medicine shows, of course, the natural limits of a purely observational science; it knows little of anatomy and less of physiology; its crude pathology is based on the doctrine of "opposites"; the idea of experiment as a means of investigation has not yet arisen. Yet in spite of this the school of Cos is a landmark in the history of rational medicine. Throughout its writings there breathes a certain lofty and independent spirit, so that we feel that we must reverence Hippocrates not only as a great physician but as a great gentleman.

We look back to Athens, in the fifth and fourth centuries B.C., as the golden age of Greece and the fountain head of later European thought. It is the more disappointing to find that Athens itself made little direct contribution to medical science; the Athenians of those centuries were more concerned with metaphysical speculations than with science, until, indeed, we come to Aristotle. Nevertheless, it would be a grave mistake to suppose that Athens did nothing for medicine, for at this period were firmly founded some of the abstract sciences, and, above all, mathematics and logic, upon which the future development of the concrete sciences ultimately rested. I must not dwell on Aristotle, for he has been the theme of more than one Harveian oration, and rightly so, for his influence on Harvey was immense; probably no one man has so profoundly affected the thought of succeeding generations. Logic was essentially his creation; his works remain a monument to the genius of the Greeks, not only for careful observation and daring speculation, but for correct thinking. I have at times thought it might be well if this College insisted on a course of logic for the Diploma of Membership.

The gradual decay in the glory of ancient Greece is usually attributed to the known historical facts—to their petty quarrels and their incapacity for combining amongst themselves. There was probably also a deeper cause; the racial fusion to which they owed their origin had passed its period of maximum fertility, and the Greeks but fulfilled the doom which ultimately overtakes every civilization. But Hellenism did not die; what the Greeks had achieved remains as a quickening influence for all time.

In medical science the centre of interest now shifts elsewhere, and especially to Alexandria, but it remains Greek. Alexandrian culture represents a sort of continuation of that of Athens, though, perhaps, in comparison smacking somewhat of Wardour Street. The great creative age in art and poetry had gone by; it was a period of imitation in art, and in literature largely a time of scholiasts and commentators on the better work that had been done before. But here we have an excellent illustration of Flinders Petrie's dictum that in each period of culture science reaches its prime long after art and literature have begun to decline. For all the branches of science then extant continued to advance in Alexandria. I need hardly recall how mathematics and astronomy flourished under the Ptolemies, and in medical science the Alexandrian school maintained its premiership for many hundred years.

Anatomy and physiology form a necessary basis for medical science, and much as the earlier Greeks had done for medicine they had lacked any adequate knowledge of these subjects. The later Greeks proceeded to remedy this defect. The practice of dissection became established, and anatomists must look back to the Alexandrian school for the foundation of their science. I must pass over Herophilus and Erasistratus and commemorate the later Greek school in the person of its most distinguished alumnus, Galen.

The gifts of Rome to Europe were law, order, and settled government; the Romans left us a stately literature, but to science, as to art, they made little original contribution. If we except the elder Pliny's *Naturalis Historia*, itself largely a compendium, Rome produced no great scientific work. Roman medicine, like its art, was wholly Greek in origin; its great physicians received their training in Greek schools, and Celsus, the best-known writer on medical subjects, was not himself a practitioner of medicine. Thus, though we associate Galen with Rome, I must commemorate him as a Greek—the last and in many ways the greatest of the Greek physicians.

Nearly 600 years had passed between Hippocrates and Galen, and when we compare the two it must be remembered that Galen had the advantage of that 600 years of medical experience. It gave him a wider outlook and thus made him a better physician, though I conceive Hippocrates, considering his times, to have been the bigger man. I do not propose to dwell on Galen's eminence as a physician, though he stood far above all others of his age. His real claim to immortality may be put into a few words: he was the first to make systematic use of the experimental method in medicine, and he founded the science of physiology. He probably owed more to his studies in Alexandria than to his native school of Pergamum, for there he had the opportunities of human dissection which were denied to him later in Rome, and there, too, he must have gained his first insight into the possibilities of the experimental method. To us it seems a marvel that a man of Galen's ability—an adept in the methods which we know he used—should have failed to apprehend the great fact of the circulation of the blood, for he came very near it. History is full of instances in which erroneous assumptions, so firmly held that their truth is never called in question, blind men to a truth which would otherwise be obvious. It was so with Galen, and, did we know it, it is probably true of ourselves. Nevertheless, his experimental discoveries in other regions of physiology, and particularly in the domain of the nervous system, entitle him to be called the father of that science. Galen must also be credited with a great advance in pathology. The earlier Greeks had regarded internal medicine from a purely humoral aspect; the later Greeks began to recognize affections of certain definite organs, but Galen developed this conception beyond any of his predecessors. His latest treatise, *De Locis Affectis*, deals with the morbid conditions of the different organs as judged from the symptoms of the patient. Dr. Payne has justly remarked that, had Galen been able to make *post-mortem* examinations, he might have founded morbid anatomy. It so happened that Galen was one of the most prolific writers who ever lived, and by devious ways much of what he wrote has come down to us. It is no wonder that the works of so eminent a man should have come to occupy in later ages a position in medicine almost like that of the Bible.

For with Galen we come to the end of the great age of classical civilization, and it will be fitting, before leaving it, to summarize what Greek genius had accomplished in medical science. An atmosphere of intellectual liberty had been established by the Greeks, essential to the birth and growth of science; they had developed the love of knowledge for its own sake. Their shrewd observation had transformed medicine from a medley of traditional empiricism and superstition into a natural science; they freed it from magic and laid the foundations of a rational treatment of disease. Towards the close of their epoch they devised the experimental method and used it to found the science of physiology. Indirectly medicine, like the other sciences, owes them the laws of clear thinking and the development of mathematics and mechanics. Could I have selected four names from antiquity who more fully deserve our gratitude as benefactors of this College than Thales, Hippocrates, Aristotle, and Galen?

When the Minoan civilization passed away the Greeks had been compelled to begin again almost from the beginning. There was no such complete break between the classical period and our modern civilization; much was handed on by direct tradition, and vastly more by written manuscript. Nevertheless, after the fall of the Roman Empire Europe had to be remade, and to pass through its dark ages before the dawn of a new culture. The new mixture of races seems to have been incapable of intellectual achievement till the ordained incubation period was over, and that period was at its darkest from the fifth to the tenth centuries A.D. Art was at a low ebb, and the culture of classical times was largely forgotten. The great libraries were neglected, or in some cases destroyed, and an immense amount of the literature of Greece and Rome perished beyond recall. Medicine shared the fate of the other sciences, and what was not forgotten became debased by admixture with Eastern magic and superstition.

The dominant power in Europe during this period was the Church, and although its conservatism had a wholly deadening influence as regards the advance of science it did much to preserve the culture of classical times. The mediaeval monasteries were the storehouses of learning, and though the study of pagan writings was not encouraged there was nothing to prevent a good monk of literary tastes from making copies of ancient manuscripts. This was one channel by which some knowledge of classical medicine was handed down the dark ages, but there was another of even greater importance. In the seventh

century occurred the last of the four known Arab migrations which have overwhelmed neighbouring peoples; it spread not only over Western Asia but all round the Mediterranean. Whatever may have been the primitive culture of these Arab invaders, they presently acquired a high degree of civilization. They were a keen-witted race, quick to assimilate the culture with which they came in contact, and this was largely Greek in origin. For some hundreds of years the Moorish Empire in Spain was far in advance of the rest of Europe in literature, in science, and in medicine. The best medical works of classical antiquity were translated into Arabic, and it is by this strange route that much has come down to us which would otherwise have been irretrievably lost. The Arabs were skilled in criticism and dialectics, but they were not great original thinkers. They left us descriptions of certain diseases unknown to the ancients, such as measles and small-pox, but medical science owes them relatively little. Their chief share in medicine was to absorb and transmit the knowledge of the Greeks.

An end came at last to the dark ages of Europe, and in one sphere of activity after another the fetters of the past began to be shaken off. Art was the first to revive; sculpture and architecture almost reached the zenith of their development in the thirteenth century; painting took two centuries longer to free itself from archaism. Intellectual freedom was still longer delayed; from the twelfth to the fifteenth century there was learning in plenty, but it was study devoted to what had been written in the past, not the free exercise of the mind in fearless inquiry after truth. It is easy to blame the Church for this exclusive devotion to tradition and dogma, but the Church could not prevent the Renaissance when the times were ripe; we should rather regard the fact, with Flinders Petrie, as part of the ordained cycle in the evolution of a civilization. Medicine reflects the spirit of these centuries; the traditions of the past were still supreme, and Galen was the god of the medical world. Men felt him to have been a better man than themselves, as in truth he was, and it was enough that Galen said this or that, or that his writings could be interpreted in such and such a sense, and there the matter ended.

And then, in the fullness of time, after more than a thousand years of intellectual slumber, men again began to think for themselves, just as the Ionian Greeks had done twenty centuries before. The Renaissance was at first literally a revival of learning, due to the renewed study of the Greek language and the discovery of much of the classical literature which had been hidden away in the libraries of the East. It is outside my province to discuss this great movement, which spread from Italy to England in the fifteenth and sixteenth centuries, except in so far as it influenced medical science. The first effect of the revival was to strengthen the position of Galen. It must be remembered that he was but imperfectly known in mediaeval times. Much of his work had been lost, and as for what remained it is unlikely that all the spirit of the original would be conveyed by Greek writings, translated into Arabic, and later rendered into corrupt Latin. But with the revival of Greek in the fifteenth century his original writings became accessible and manuscripts hitherto unknown came to light. It became the aim of the scholars of the time to translate these works into polished Latin for the benefit of those unacquainted with Greek. Amongst the medical humanists, as they are termed, was the founder and first President of this College. There is no more honoured name in scholarship than that of Linacre, but it is instructive to note the difference between his mental attitude and that of Harvey, little more than a hundred years later. Linacre stands for the revival of learning, Harvey for the intellectual quickening that revival was to engender. The avowed aim of the medical humanists was not the advance of medical science but a return to the uncorrupted knowledge of the Greeks; the thought and science of antiquity were still held so immeasurably superior to anything that modern times could produce that no advance was contemplated. But the seed was sown. Greek literature was the product of an original creative activity and a mental freedom to which Europe had been long unaccustomed. Men could not study it without at the same time drinking in something of the spirit in which it had been conceived and which animates it for all time. This was our true heritage in the Renaissance, and once again imbued with this spirit men felt at liberty to ask whether the ancients were always right and to criticize and test their statements. The reign of mere authority came to an end, and science recommenced that advance which has continued to the present day.

The first science to bear new fruit was anatomy. It was in Italy that the resurrection began, and the book written by Vesalius on "The Structure of the Human Body," published in 1543, set the seal upon the new method—the appeal to fact instead of to dogma. But the story of the rise of anatomy has been told so often and so well in Harveian orations, especially in relation to the organs of circulation, that I need not dwell on it. We all know that the truth as to the pulmonary circulation was first ascertained, while it was reserved for Harvey to demonstrate the systemic circuit. The method of experiment as an adjunct to observation, instead of being delayed for hundreds of years, as it had been amongst the Greeks, was now, thanks to Galen, an instrument ready to hand. And thus it came about that when a man arose, deeply imbued with the true spirit of science and capable of using this instrument with intelligence and an open mind, his study of the circulation was at once rewarded by a discovery of capital importance.

One does not commemorate the name of William Harvey in this oration merely from a sense of duty; he truly stands as one of the landmarks in the history of medical science. His was the first scientific discovery of absolutely first-rate importance to be made by the application of the methods and spirit now revived from ancient times; he possessed the vision, the power of imagination, as well as the needful industry and patience in gathering his facts and devising his experiments.

Harvey has left us two treatises of unequal greatness. The *De Motu Cordis* has no need of any introductory disquisition on scientific method, for it itself is the method incarnate. It is the mature work of a master who is sure of his ground; it sweeps us along from one short chapter to another, each filled with accurate observation and close reasoning, so that no doubt or hesitation is possible to the reader. And we feel that this is because the methods open to Harvey had been adequate to solve the problem at issue; the times were ripe for his discovery.

But he also essayed to solve other biological problems, for which his means were not adequate, and the *De Generatione*, which he was reluctant to publish, is reading of a different kind. The most instructive part of this treatise is perhaps the introduction on scientific method, "Of the Manner and Order of Acquiring Knowledge." Here Harvey in his later age sets forth the principles which had guided him, with Aristotle as his leader, in his life's work, and we realize how truly scientific were his methods. But though these methods enabled him to correct many of the errors of his predecessors, and though the *De Generatione* is full of accurate and curious observations and good reasoning, in comparison with the *De Motu Cordis* it leaves us cold. No great conclusion emerges; the real problems of generation remain unsolved. And no wonder; Harvey had no microscope. But the methods and reasoning he employed, his freedom from prejudice, his modesty—these remain a guiding light to future generations to point out the path by which science should be pursued.

With Harvey we feel that medical science has fairly entered that path. The conditions which I ventured to lay down at the beginning of this discourse as essential to scientific progress—freedom of thought, accuracy of observation, imagination, experimental verification, and logical reasoning—all are exemplified in Harvey's work. I have endeavoured to trace the birth and growth of medical science up to this point, and I fear that, in the attempt to cover so wide a field in the brief hour allotted me, I may have incurred the charge of superficiality. I must be content if the sketch, though superficial, is not wholly wanting in perspective. I have intentionally dwelt upon the earlier phases of scientific medicine, for my theme has been the spirit which brought it to birth rather than the triumphs of its maturity.

If you are not weary of somewhat trite observations, I will conclude by passing in brief review some of the influences which, since Harvey's day, have been most fruitful in furthering the growth of medical science. However admirable the spirit of inquiry, medicine can only employ the means at its command, and of all sciences medicine is, perhaps, the most complex, the most dependent upon other sciences for its development. Hence it is from outside medicine that the chief stimuli to progress in medical science have come. In saying this I would not be thought to undervalue the vast internal progress which has been brought about by clinical study. One has but to recall the mighty name of Sydenham to realize what a pure clinician can accomplish. Sydenham would have none of physiology or pathology, and we may almost wonder whether one so disdainful of science would have been pleased to know that he was the founder of epidemiology.

There is room for difference of opinion as to the impulses from external sources which have had the most far-reaching effects upon medicine, but I would name four as of exceptional importance. They are the invention of the compound microscope, the development of chemistry, the acceptance of the doctrine of evolution, and the discovery of the relation of micro-organisms to disease. The microscope was invented in Holland early in the seventeenth century, but its possibilities as an aid to anatomy were not at first grasped, and it was not till after Harvey's death that Malpighi actually saw the capillaries and the contrary direction of the blood flow in arteries and veins. The rise of histology from that time forward has transformed our ideas of the structure of the body, and with each improvement in the microscope our horizon has widened. We have passed from the organ to the units of which it is built up, and Virchow's "Cellular Pathology" marks an epoch in medicine. To-day we are a stage further, for the inquiry is being pushed into the more intimate structure of the cell itself, in the hope of revealing the nature of the processes by which it carries on its work.

The rise of physics and chemistry has been even more fruitful for medicine. We cannot nowadays consider them

separately, so closely merged have they become. We recognize the fundamental importance of these sciences for the right understanding of physiology and pathology by placing them at the root of medical education.

Chemistry has influenced medicine from the days of alchemy onwards; Paracelsus and Van Helmont stand out as picturesque figures in its history. In England the rise of physics and chemistry began in Harvey's lifetime with those meetings of scientific men which later gave birth to the Royal Society. It must not be forgotten that the work of such men as Boyle, Hooke, Lower, and Mayow practically solved the problem of respiration not long after Harvey's death—a problem second only in importance to that of the circulation—though a century was to elapse for its full meaning to become clear with the discovery of oxygen. Every advance in physics and chemistry has borne fruit for us in its turn; to-day we can almost affirm that the chief issues in physiology and pathology are to be sought in the chemical activities of the human body. These, again, are bound up with physical conditions, and there is one recent branch of chemistry the possibilities of which are only beginning to be appreciated in medicine. If we reflect that the body, from a chemical point of view, consists almost entirely of colloids, the behaviour of which is still imperfectly understood, it will be realized that advances in colloidal chemistry are destined to throw a flood of light upon the processes of vital activity.

The doctrine of evolution has scarcely received the attention it merits as a factor in modifying the opinions of medical science. So long as it was believed that the body, with all its natural functions, had been created from the first in its present condition, there was little room for inquiry into the origin of those functions, and still less into that of morbid processes. Darwin has changed all this, as a single instance will suffice to show. Metchnikoff's studies on the comparative pathology of inflammation have taught us that this is not a diseased state but a purposeful reaction against injury, gradually perfected in passing up from the lower to the higher animals. Almost without our being conscious of it, the idea of evolution has gradually effected a great change in the standpoint from which we view a large number of diseases, the symptoms and morbid changes in which we now understand as efforts of the body to maintain its integrity in face of the injurious agencies which threaten it. One might almost re-write pathology from the evolutionary point of view.

Last, but not least, of the great changes which have swept over medical science is that which was due in the first place to Pasteur, was carried on by Koch, and brought to triumphant practical application by Lister. The discovery of the true nature of infection has of necessity transformed the outlook of medicine and surgery, but bacteriology and its daughter science immunology would demand a Harveian oration to themselves.

We loosely speak of such fundamental discoveries as those I have just mentioned as producing a revolution in medical science. It is not revolution, but upward growth. With the establishment of each great principle we gain a fresh height from which the field of science takes on a new and wider aspect, and we may be confident that we shall reach yet greater heights to reward us with an even ampler range of vision. There is no sign that the vitality of science in our civilization is in any way spent; on the contrary, its fertility is unchecked. During the late war we saw for the first time the scientific forces of this country fully mobilized, and no previous five years have seen so many scientific problems brought to a successful issue. So forcible has been the lesson that science has gained mightily in public estimation, and research is on the lips of everyone. New facts are being gathered in, old facts are coming to be seen in a new light; we are almost bewildered by our own progress. The workers in the field of medical science are many, and it may not be given to any one of us to make an immortal discovery, such as that of the circulation of the blood. But the humblest of us can work in Harvey's spirit and bring his contribution to the building up of knowledge in the full assurance that even a single stone, if honestly and truly squared, will in due time find its proper place in the fabric.

THE third report on colloid chemistry and its general and industrial applications has been published by the Department of Scientific and Industrial Research (H.M. Stationery Office, price 2s. 6d.). The report gives an account of the work done during 1919 by the Committee of the Chemical Section, British Association. It does not touch upon the pharmacological and therapeutic aspects of colloids.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF NEUROLOGY AND PSYCHIATRY.

HENRY HEAD, M.D., F.R.S., President.

DISCUSSION ON PSYCHOTHERAPY.

OPENING PAPER

BY

T. A. Ross, M.D.Edin.

PSYCHOTHERAPY covers a vast domain, and it would be impossible within the limits of this paper to make even the flimsiest sketch of the whole ground; it is proposed, therefore, to consider one aspect which seems of some importance, to try to examine the reasons which divide us into hostile sects, and to see whether we cannot do something to heal our divisions. It cannot be denied that those who hold different views on psychotherapy regard each other's opinions with something approaching bitterness. While difference of opinion is healthy—for there is no vitality where there is complete unanimity—bitterness and the imputation of unworthy motives do not lead to progress, but engender only the partisan spirit that is incapable of right judgement.

It is probable that there is no school which is not getting good results, and there is none that is not experiencing failures: let us look into the causes of these successes and failures, and we shall go far towards clearing up the misunderstandings which occur among us. These misunderstandings are not imaginary. In a recent book[1] on war neuroses the statement is made that on no account must psycho-analysis be practised; on the other hand, in the last edition of a textbook[2] on mental diseases it is laid down that there is only one certain cure for neurasthenia—namely, psycho-analysis.

We have these sects in psychotherapy mainly because we are in a state of adolescence. Eighty years ago general medicine was still in that condition, and there were bitter sectarian wars, the last of which echoed into our own time, the war of the homoeopaths and the allopaths. Now homoeopathy is dead, but it is not probable that any of the descendants of the victors would care to be described as allopaths. We can see now what an unimportant part of medical science they were wrangling over, and that it was about that part of their therapy which they comprehended least. Within our specialty the same thing is going on, the same hatred and distrust, the same imputation of bad motive.

Let us see whether each side has not good objective reasons for its views, whether the truth will not turn out to be that there are classes of cases which need no analysis, and others where it is essential; whether in short the controversy will not end in showing that both sides are right.

The first obstacle which has prevented understanding has been names. We cannot do without names, but we are all in the habit of thinking that when we have named a phenomenon we understand something about it. So when we have named a condition "hysteria" we find one man thinks at once of the necessity of psycho-analysis, while another thinks of the utter folly of psycho-analysis, and of the need only of simple persuasion.

There is more than one reason for this. Hysteria is not only a condition with protean symptoms, it is a condition with manifold kinds of roots. These may be implanted in the superficialities of the present, or they may drive down into the deepest layers of the past. There is, truly, no such entity as hysteria; there is only a kind of problem, each example of which needs a separate kind of solution.

The reason that this is not grasped more widely is because of the extremely limited experience which any one

of us has, and because of the facility with which we tend to run in narrow grooves. One man acquires most of his experiences among the easily cured, another among those benefited with more difficulty. The latter becomes contemptuous and makes no attempt at the easy cure; the former sees so many patients easily cured that he makes little further attempt at the more difficult, and tends to think they are malingerers. It is one of the misfortunes of being a specialist that one tends to see exclusively difficult cases only; and the better the specialist the more does this happen. Patients are not seen by specialists till they have failed elsewhere. Thus we find in a recent book [3] by one of our foremost analysts a feeling of gloom on the whole subject. He is inclined to think that it is more the very early and mild cases that are worth analysing, as they alone hold out hope of real cure, that palliative methods are more suited to very bad ones, as they can at best look only for amelioration. Unfortunately also we do not see much of our own failures; they drift off. We do see the failures of other people, they have drifted to us. These are apt not to speak kindly of the former doctor who failed to cure them, and when they tell us of their previous treatment we may be sure it was not put in the best light. They probably were worse after it, for he who sets out to cure a neuropath and does not help him very much is sure to make him worse.

The problem, then, before us is not whether a case is one of hysteria or neurasthenia or obsessional neurosis or anxiety neurosis—it is where are the roots of the malady? It is in the answer to this that the key of therapy will be found.

There are men of austere Calvinistic leanings who say that the matter was predestined from the beginning, and it is to the intrauterine life that they look for the origins of psychoneurotic disorders. With these the writer of this paper cannot pretend to deal. Others less exacting in their ruthless logic say that the foundations are laid in infancy. Naturally both these maintain that the cause of any neurosis lies in the unconscious, and that there can be no neurosis without repression. It must be admitted that there is much to be said for the infantile view. Every act of the child, every desire which is gratified or refused, every difficulty faced or shirked, help to build its character, to determine how it shall react to environment—and good nervous health is nothing but suitable reaction to any stimulus which life provides. But even if we grant this we need not conclude that every neurosis requires investigation back to the origin of life.

Take the case of a man seen eight or nine years ago, who complained of pain radiating towards the throat on deglutition, and whose voice was hoarse. His history included the fact that some doctor had spoken gravely of the possibilities and that he himself had thought that cancer of the larynx was what was being hinted it. The larynx appeared normal on examination. But the fear was always in the patient's consciousness; it was spoken of quite readily. A single conversation of about half an hour dissipated it altogether. The pain disappeared forthwith, and the patient showed no further neurotic symptom till his death, which occurred about six years later from diabetes. In such a case it seems absurd to say that the cause of the neurosis lay in the unconscious. The patient was an intelligent layman, who knew what a terrible thing cancer of the larynx was, who had received an impression, from someone whom he believed to be competent, which conveyed fear, and he suffered in consequence from a neurosis. He never repressed anything. The persuasionist sees many cases of this kind, knows that the trouble is only a matter of misinterpretation, and laughs at the idea of analysis. The analyst is, however, not in the least abashed by a story of the kind. Why, he will ask, did the man yield so readily to terror? Why did he not wait for confirmation of his fear? And an analysis would doubtless show that the man had fear of pain and fear of death, that he had associated with these fears a large number of complexes, death-wishes towards his friends and relatives, sexual complexes, complexes of all sorts. In the end, by this method the patient would have been cured, and the analyst would have felt that the danger of relapse would be lessened to a greater degree than if the cure had been achieved by reassurance. In this case it could not have been bettered; and it may be pointed out that later this man did face death without losing his nerve, so that probably it was not fear of death but fear of torture that made him give way before—and there are not many of us who will face torture, in cold blood and for no cause, with much fortitude. There is a mass of psycho-neurotics who are suffering mainly from the fears and difficulties of their present environment, who have not suppressed these fears in the least, and who are curable in this way. The ancients, who were perfectly familiar with that very modern discovery that mental conflict affects the bodily health, furnish many examples in their literature of conscious constellations of ideas being the causative factor.

"But Amnon had a friend whose name was Jonadab, the son of Shimeah, David's brother; and Jonadab was a very subtil man. And he said unto him, Why art thou, being the King's son, lean from day to day? Wilt thou not tell me? And Amnon said unto him, I love Tamar, my brother Absalom's sister."

But the persuasionist should take care that his cases are cured, that he has not simply got rid of something very manifest and neglected a series of other symptoms because he did not ask about them. There were cases of hysterical paralysis in the war which by persuasion alone were really cured, but there were many who, after the disappearance of their gross disability, were sleepless, had headaches and other symptoms which were ignored, but which were the cause of further failure.

Between these two extreme schools there has grown up a considerable body of opinion which is blessed by neither and despised by both, partly because it agrees with both sides, and perhaps partly because it is without a name. This should really be a point in favour of this trend of thought, but the world has ever despised the nameless. Its view, shortly, is that some of the technique of analysis is most helpful, that some of its conclusions are correct, and that persuasion is a most valuable adjunct. There is with this innominate body a belief that analysis has been used to excess, that the sexual theory, even in its latest attenuated form, has been overdone, and that a limit must be put to the interpretations which are obtained by free association.

It has just been said that the innominate body has much to commend in the teaching of Freud, and, as a member of this class, the writer finds that a delicate thing to say. To the followers of Freud it will be an offence. To them he would say that he and his fellows recognize the greatness of Freud, that they are aware that he has been the great stimulus to psychotherapeutic work, that his technical methods are of unsurpassed value, but that all the same they respectfully remain protestants, unable to bow to any kind of medical pope, unable to accept anything *ex cathedra*.

The main quarrel that the "innominates" have with the Freudians is that the latter seem to them to go too often deeper than is necessary for the purposes of cure. If it is true that they do so the disadvantages are many.

The analysts often say that they would gladly find some way of shortening the processes by which they arrive at their end, and to the observer it must be admitted that they have made at least an attempt to do so—namely, by the adoption of the theory of fixed symbols. If certain things in dreams are always symbolic of the same thing obviously much time might be saved, but the view seems to those of the innominate body dangerous, making it too easy for the observer to read his own complexes into those of the patient. To this danger the analysts are alive, and their constant advice is that it should be avoided by the analyst himself being analysed. Even if this were done it does not follow that it would of necessity improve matters. It is quite likely that a man would tend to run after those complexes which had been discovered in his own case; this danger is all the more likely now that we understand that a further attempt is to be made to shorten analysis by allowing the analyser to interfere and direct the course of the associations.

The followers of Freud analyse deeply, because even if the patient is better at an early stage they attribute this betterness to something unstable, transference, faith in the physician. They work from a theory which seems fundamental in the Freudian view, but which appears to the present writer unsound. This theory is that of the attachment of psychical energy to the complex. When a constellation of ideas is repressed emotional energy is attached to it, and is repressed along with it; this energy being part of the sum of the energy of the universe can neither be created nor destroyed. It therefore has to do something. It may become sublimated and be used for

altruistic or artistic work; but if all outlet be denied to it, it will cause symptoms. If such a theory is true, it is logical to turn out the entire subconscious content of the mind in order that the misdirected energy may be freed for useful and unhurtful work.

Even if it be granted that this psychical energy is the same thing as the energy of the physicists, it does not follow that it must do work. All the energy of the universe is not doing work; some of it is potential. The solar energy is stored in the coal, and as it lies in the undisturbed seam it can remain there for millions of years and cause no symptoms to the land above it. It is only when communication is made with the outside air and a suitable stimulus applied that the energy becomes kinetic. So we might imagine the energy of a completely repressed complex. It is shut off from the oxygen of consciousness; no stimulus can reach it. If it is not disturbed nothing can happen.

The school of Freud may say that they admit that this energy may be latent, but the literature teems with the view that it is always kinetic. The doctrine is never stated so baldly as has just been done, but sentences constantly occur which, if they have not this meaning, do not seem to have any at all.

> The repressed impulses do not die . . . but continue through out life to strive towards gratification. Owing to the permanent and automatic action of the inhibiting forces, they cannot attain any direct mode of gratification, and so are driven to seek indirect symbolic forms of expression. The energy derived from them is transformed into these secondary more permissible kinds of activity.[4]

> The most frigid woman has a sexual instinct, even granting (what is most unlikely) that she has not and never did have any conscious sexual feeling. And if she has a sexual instinct, it must play *some* part in her mental life, even supposing (another impossible state of affairs) that it is wholly confined to the unconscious. In the face of numberless observations which found the sexual factor present and dominant in the neurosis, the only sort of case report that should have any weight against Freud's statement would be one which not only connected the symptoms with exclusively non-sexual factors, but at the same time traced the sexual instinct through all its ramifications and showed what it *was* doing and how it *did* manifest itself.[5]

Granting that this energy really exists, let us examine the arguments in favour of the ideas that it must be kinetic and is capable of being repressed.

Certain phenomena which have been put forward by Dr. William Brown have been used as supporting the view. He has described amnesic patients who, on being hypnotized, recovered their lost memories; accompanying this there has been an outburst of intense emotion, which was supposed to have been repressed along with the dissociated period of time. No such hypothesis is necessary for an explanation of the facts he has described. When the constellation of ideas was a percept before the amnesia, that percept was of a terrifying character, and was accompanied by an emotional reaction; when it was revived as a concept "with hallucinatory vividness" according to Dr. Brown's practice, it was again to all intents a percept of the same nature, and the same mechanism naturally produced the same result. There is no need to suppose that the discharge of energy had anything to do with the cure. By less dramatic methods many suppressed events of a terrifying character may be brought more gradually and less vividly into consciousness; and cure of amnesia may be brought about without any great emotional display.

Take, again, the somatic hysterical symptom. From an emotional reaction a patient becomes paralysed. He remains so because he believes he is organically paralysed; and this belief depends on an active wish not to be well in a hurry. This wish may be vague and would be hotly repudiated, but it is not easy to explain loss of function as an example of the action of repressed energy. Energy might be keeping the complexes from entering consciousness, or it might be thought of as keeping the paralysed limb in a state of dissociation. But that is not the energy of the complex but of the censor.

When we turn to the anxiety case there seems at first sight more ground for the belief in repressed energy. Here we have clinically signs of overaction in many directions—tremors, insomnia, abnormal reactions to sounds, and many other stimuli.

> Whether it were a whistling wind, or a melodious voice of birds among the spreading branches, or a pleasant fall of water running violently; or a terrible sound of stones cast down, or a running that could not be seen of skipping beasts, or a roaring voice of most savage wild beasts, or a rebounding echo from the hollow mountains; these things made them swoon for fear.[6]

The patient suffering from anxiety neurosis is not one suffering from a continuous illness; he seems rather to be one who has, as it were, a succession of small illnesses, one following on the top of another; to-day he has a headache, and to-morrow it is distinctly better, but in the evening he has it again, and it continues for a few days, and then is gone for a little, and so with his other symptoms. There are days when he feels well, with much available energy; on other days he is fit for nothing. When such events are studied individually it will be found that each was preceded by some anxiety, manifest or latent. The manifest need no supposition of repressed psychical energy. One of the patient's many worries has struck him, and he has an emotional reaction.

The latent anxieties can also be explained without reference to suppressed energy. A complex stimulator has touched some repressed constellation which was therefore about to be summoned into consciousness, but which was kept out by the censor. There has been, as it were, a struggle at the door of consciousness. Would it not be odd if a conflict of that sort did not give rise to symptoms? It is difficult to see where the idea of repressed energy helps. It is not the mere bringing of the complex into consciousness with the liberation of energy that brings relief. It is, as Morton Prince[7] has suggested, that when it is brought into consciousness the chance of viewing it from a new standpoint is thereby rendered possible. In many cases this is deliberately brought about by the doctor. It is a simple thing for him to show the patient that his view has been one-sided, and that, seen from a different aspect, the trouble may have a different signification. The complex will then be robbed of its power to initiate emotional reactions, and the complex stimulators will lose their effect. The strict Freudians say that they do not interfere, but get benefit all the same; interference, however, is not absolutely necessary for this to take effect. When the present writer was in general practice it often occurred that he encountered a case of which he did not have a glimmer of understanding; and in such an event he was accustomed to ask for a consultation. On such occasions there is the talk by the practitioner in attendance to the consultant, the examination of the patient by the consultant, the after-talk when the consultant explains the matter. Often enough for him to be assured of its importance the present writer used to wish that the consultation could have ended with the close of its first phase, before the consultant had seen his patient. For as he talked of the case aloud, he was aware that fresh aspects of it were presenting themselves to his mental vision, and by the time he had finished the mystery was no longer a mystery but a set of coherent facts which easily built themselves up into a harmonious whole. So with the patient and his complexes; as he talks them out in the presence of a helpful friend new aspects may present themselves. But here again is no need for the idea of repressed energy.

In the obsessional cases where we have the substitution of a less distressing idea for a more distressing one, there is no need to conceive of repressed energy. The obsession may be regarded as a ragged and all too small cloak with which the patient is constantly striving to cover some still more objectionable object. This object need not be regarded as possessing any energy at all. It is simply something which the patient does not wish to look at, because doing so would cause pain.

When any patient has come under the care of a doctor in whom he has confidence, an improvement in his symptoms will soon ensue. It may not last long, but it always occurs. The theory of repressed energy has been used to explain this. Certain affects which the patient had repressed are supposed to be "transferred" from their original object to the physician. It is difficult to understand exactly what this means, but so far as diligent study can make out, the energy is supposed to be projected on to the physician, and the patient having got rid of it feels better. This happens only if the patient likes the doctor. Otherwise the reverse happens and he feels worse. Why should not hate and distrust be as good a way of getting rid of suppressed energy as love and trust? The first get rid of as much energy as the second. It seems easier to

believe with Dejerine that depressing emotions cause disagreeable symptoms; that elevating emotions such as hope act in an opposite way. Faith in a doctor is a sure accompaniment of hope, which was, we remember, the name of the key that opened the dungeon in Giant Despair's castle and set the prisoners free.

In his interesting account of the latest development of Freud's views, given this year at the Royal Society of Medicine, Dr. Ernest Jones mentioned a possible answer to this view of hope. He said that Freud had pointed out that psycho-neurotic symptoms might arise at the height of success, and he gave the Macbeth-Lady Macbeth concept as an example. But the Macbeths never achieved their end, and the first great breakdown (though by no means the first symptom) occurred when he seemed at the top of his fortune in the banquet scene, and Banquo's ghost appeared. The first symptom of all was, of course, long before—namely, the hallucination of the dagger, which occurred at a period of fear and anxiety. But at the banquet Macbeth must then have seemed to the Thanes secure in his power. Duncan was dead, his sons were fugitives, he himself was undoubtedly master. He had news that Banquo had been successfully murdered. But he had also just heard that Fleance had escaped—Fleance, within whose veins flowed the blood of that race that the sisters had made him think would supplant him. Banquo's murder was therefore useless; the whole plot had failed. It is somewhat surprising that Freud should, like the Thanes, have taken only the manifest content of the phenomena presented, and not have striven to see what must really have been in Macbeth's mind.

A neurosis may seem to begin at a time of success. Analysis will show that the idea of success was not in the patient's mind.

Now, if we get rid of this idea of the repression of psychical energy, or even if we do not go so far and get rid only of the idea that, if it exists repressed, it is not necessarily always kinetic, what do we gain? This, that there is no longer a necessity to turn out all the complexes that are lying in the unconscious. If my room is dirty and needs redecorating, I shall think the decorator foolish if he proposes as a routine to make an examination of the foundations of the house. It might very exceptionally need to be done, for the foundations might be damp and this might have spread upwards. If I am proposing to install a dynamo I should need such an examination. If it is said that this common-sense view is accepted in practice, I must refer again to the various books already cited.

What lines should we follow to get the essential complexes and avoid the unnecessary ones?

To me it seems that a return to something more after the long abandoned practice of Breuer would be helpful. It is possible that the present psycho-analytic procedure is much too wide in its scope of inquiry. In all the psycho-analytic books much prominence is given to the interpretation of dreams, and in most it is called the royal road to the unconscious; and unfortunately the phrase appears to be true. It does not in the least follow that the interpretation of dreams is the best clinical method of getting back to causal complexes. For the experimental understanding of the working of the mind the study of dreams has no doubt been of unrivalled value, just as the opening of the human thorax would have been the best method of studying auricular fibrillation. As soon as the main attack was made by dream analysis the enormous ramifications of the unconscious were discovered; the potentially explosive material buried in every corner was exploded, and in conjunction with the doctrine of repressed energy the view seemed unassailable that all this material—not some of it, but all of it—was necessarily responsible for the onset of the neurosis. It seemed possible to the pioneers that they would be able to do the work thoroughly, to get rid of all the perilous stuff that weighed upon the heart, and so effectually minister once and for all to the diseased mind, as, so it was said, the surgeon opens up all the pockets of an abscess. But as has been attempted to show, all the stuff may not be perilous unless it be explored. And if we are to employ surgical similes, what of lightly opening up an old wound packed with quiescent tetanus bacilli? In any case, the task of getting rid of all seems impossible. The thing is too big. Dreams get on to too many associations, on to a number which few men are able to cope with, on to a number of painful complexes which need never be unearthed. For if the theory of the ever-kinetic energy of the complexes be abandoned, there is no need to unearth any complex that is not being stirred often by its appropriate stimuli. We want to narrow our investigation to those complexes which are in frequent communication with the outside and which are being constantly disturbed. Is it possible to narrow the inquiry in this way? I believe it is. The method to be employed is free association. As a method it can hardly be improved upon, and while free association is being practised, there should probably be no interference by the observer. His interference will come when the complex has been obtained, when he will be able to present the trouble to the patient in a better light. If it is undesirable to start from dreams, from what are we to start?

At the beginning we may start with the most marked symptoms presented in the history, which was more or less Breuer's method, only we use free association, not hypnotism. We should try to get the patient to think back about these symptoms through the years till we come to their origin, or what seems to him their origin. If he will mentally recall the environment in which they arose—the house he lived in, the school he went to, the other boys, the roads, and so forth—all sorts of other forgotten memories will crowd in upon him. When he has got his environment clear, let him picture it, and from that picture practise free association. Complexes will then appear at the surface, of a kind which will explain much. Later, while he is under treatment, he will report relapses, relapses which occurred for no ascertainable cause. If he is being seen regularly it will be found easy to fix a day, an hour, a minute when this occurred; again he pictures the whole scene of the relapse just before the symptom came on, and then says what comes into his mind by free association. Again a complex will be unearthed by him with very little trouble, and one which will be found to have a definite bearing on the case.

Gradually it will be found that the complex stimulators are losing their effect and that the patient can face up to them. When he has by this method become comfortable he may be left alone to report when relapse occurs. After many years this may not have occurred at all. If it does occur the process can be repeated.

It must be acknowledged that there are cases which do not yield to such simple treatment, just as it is acknowledged that there are some which do not yield to the most elaborate methods. It is too soon to say yet which will on the whole produce the most satisfactory results; but it seems as if it would be better to leave the wider analysis which dreams entail until this much narrower analysis has been thoroughly exploited. If it fails altogether the wider one should be undertaken.

It is hoped that something has been done to show that there is a scope for the various kinds of psychotherapy now being practised, that there is no need to dub some of them as palliative measures, no need to regard others as wildly fantastic. Much of the psychotherapeutical literature has been unwise, too much of it has been merely polemic. It is time that we tried to see what our fellow workers are about and ceased to regard them as merely unprincipled persons who are seeking their own ends or as fools who are not fit to be trusted with the simplest case.

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ALDREN TURNER, M.D., F.R.C.P.,

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I PROPOSE to confine my remarks to psychotherapy as it appears to one who is called upon to advise and treat patients suffering from nervous disorders, rather than from the view-point of the professing psychotherapeutist.

Looking at the subject from an interested but detached position, I confess to some bewilderment over the varieties of psychotherapeutic measures: suggestion, persuasion, explanation, relaxation, hypnotism, therapeutic conversation, free association and psycho-analysis. There is reason to believe, also, that individual practitioners have modifications or combinations of the primary methods. I

am informed by a well-known psychologist and practising psychotherapeutist that, whatever the method adopted, all psychotheraphy resolves itself into treatment by suggestion. Surely it would be of enormous service to many practititioners if some guiding principle were formulated upon the relative value and expediency of the recognized methods of psychotherapy and of the types of nervous reaction likely to derive benefit from one or other of them.

Such a step may be considered to be placing the psychotherapeutic weapon into the hands of insufficiently instructed persons, but Dr. Ross has shown how an analysis through free association may be carried out by any medical man using ordinary intelligence and under the guidance of simple psychological principles.

The great service which has been rendered to medicine by the psychological studies of the past few years is the recognition of the psychogenic factor in the causation of the neuroses and some of the psychoses. It is generally accepted that the psychoneuroses are reactions to a failure of psychological adaptation or readjustment to circumstances, and that these reactions may be of a type known as hysteria, anxiety neurasthenia, psychasthenia or even epilepsy in some instances.

But the recognition of these disorders clinically is not always easy. We know how frequently the symptoms of hysterical paralysis are grafted upon an organic basis, such as disseminated sclerosis. Most of us are alive to the difficulty of eliminating from the neurasthenic picture the influence of early organic disease, such as tuberculosis, arteriosclerosis, or general paralysis of the insane. We are all aware of the close association existing between hysterical and epileptic seizures and the great difficulty which may be experienced in differentiating the one from the other. We realize that many epileptic seizures, indistinguishable from those of genuine epilepsy, may be symptomatic of gross organic disease of the brain or its blood vessels.

It seems hardly necessary to mention how often symptoms of a neurasthenic-like type precede or are the initiatory phenomena of one of the established psychoses. A "fear of disease" has been mentioned by Dr. Ross in illustration of the superficial and easily displaced nature of some phobias, but we cannot forget that such a fear may be an instinctive premonition of the development of that particular disease, be it cancer or any other, which forms the basis of the patient's besetment.

There is a large group of medical cases in which symptoms of so-called neurasthenia and chronic anxiety are associated with recognizable physical disorder, such as gastro- and viscero-ptosis, floating kidney, etc. Under the same group may be placed the false cardiopaths, false gastropaths, sexual hypochondriacs, and the like. It is becoming increasingly evident that in certain types of temperament epileptic reactions may be explained by psychogenic influence. There is probably general agreement that individual seizures in a patient with established epilepsy may arise from emotional shock or mental conflict, but a much fuller understanding of the mechanism of epilepsy and of its root causes is necessary before the purely psychogenic causation of epilepsy can be accepted and its treatment by psychotherapy regarded with assurance.

There seems also to be a tendency to disregard, or at least to minimize, the influence which physical causes play in the determination of psychoneurotic reactions. Fatigue, exhaustion, chronic ill health, acute toxic or infective disorders, may contribute profoundly to that state of nervous instability, diminished resistance, or impaired control, which favours reaction to emotional shock—a circumstance which shows that physical remedies should not be entirely displaced by psychotherapy. For these and such other reasons as have been mentioned by Dr. Ross, no one doubts that psychotherapy has its failures. In this respect it does not differ from other therapeutic methods, such as the "rest cure" and the treatment of epilepsy by bromides. The essentials to success in psychotherapy do not differ from those relating to other branches of medicine. They entail a sound knowledge of general medicine, and more especially of neurology and psychiatry. Psychotherapeutic treatment should be invariably preceded by a careful clinical investigation of the physical state of the patient before a psychological examination is made of his mental symptoms.

There is only one other point to which I would like to refer, and it is the somewhat unfortunate degree of secrecy under which treatment by psychotherapy is commonly conducted. I admit that there may be cogent reasons from the methods of the confessional, but it is just this atmosphere of mystery, not untinged with a suspicion of the quality and quantity of the means employed, that has tended to stultify its real usefulness in the minds of the large body of practitioners and has made it an obsession in the minds of others. At a time when psychotherapy is recognized as a legitimate means of treatment and psychoanalysis is freely discussed in general conversation and in the press it is only right that medical opinion should be sufficiently informed to guide the seeker after health along the right lines.

A. F. Hurst, M.D., F.R.C.P.,
London.

I regret that this discussion on psychotherapy should take place before the Neurological Section, as it seems to me it would lead to more valuable results if a combined meeting of all the sections had been arranged for it. For psychotherapy is not merely required for the treatment of the neuroses. Not only is a large functional element frequently associated with organic nervous diseases, but many patients suffering from a great variety of disorders—whether medical or surgical—benefit by psychotherapy given at the same time as medical or surgical treatment. The difference between the successful and the unsuccessful practitioner depends more upon his psychotherapeutic ability than upon his knowledge of medicine. His psychotherapy is generally applied unconsciously, but it would be still more successful if he had learnt the elements of psychology and psychotherapy as a student, and for this reason open discussions on the subject must be to the advantage of every medical practitioner. The experience I gained in the war has led me to recognize far more than I ever did before how large a functional element there is in many diseases which I should hitherto have regarded as entirely organic. I would place myself in Dr. Ross's intermediate class, as my ideas on the subject of psychotherapy correspond very closely to his. He quotes a view I expressed three years ago on psycho-analysis, but this was at a time when I was observing very serious results following the employment of psycho-analysis in soldiers by members of the extreme Freudian school. If, however, by psycho-analysis one means no more than analysis of the psychological history of the patient, nobody could disapprove of it, but the word in the minds of many people suggests the acceptance of all the doctrines of Freud, and especially of the sexual origin of the neuroses.

In my own experience civil cases differ very little from those observed during the war, and the majority of the neuroses depend upon psychological factors which are comparatively easily discovered by ordinary conversational methods, if the patient's confidence has been gained. More elaborate methods are rarely required, and I have yet to see any evidence that the cures obtained by simple explanation, persuasion, and re-education are not as complete and permanent as those obtained by any more elaborate psychological methods.

Bernard Hart, M.D.,
London.

In former years psychotherapy had to battle strenuously for recognition within the pale of medicine. This recognition has now been generally conceded, but the strife and dissension persist. The struggle at the present time, however, is an internal one, and is waged between the exponents of the various methods of psychotherapy. The most active of these disputes rages round the doctrines of Freud. Psycho-analysis has been subjected to many criticisms, some of them based on ethical and aesthetic grounds, which are naturally irrelevant and futile in the sphere of science. To the latter the answer is sufficiently convincing that anyone who cares to investigate cases by Freud's method will confirm his results. The most solid criticism is, however, directed against the method itself, questioning whether it is not in itself a faulty weapon, and this criticism it is not easy satisfactorily to confute. Nevertheless, a great number of Freud's conceptions have withstood all the tests that

can be applied to them, and it is not too much to say that they are now firmly incorporated in the structure of our knowledge. How far other sections of his teaching are sound cannot yet be decided with certainty, but they are at least worthy of careful scientific investigation free from the dust of conventional prejudice. It is certain that Freud's work has opened a new era in psychology and psychopathology, and his introduction of the dynamic point of view—the conception of mental processes as the resultant of the action and interaction of great instinctive forces—has fertilized immeasurably the arid field of the old academic psychology. One would like to plead, therefore, for the frank but critical recognition of the gains to our knowledge which Freud has brought, and for co-operation amongst the various schools of psychotherapy rather than futile dissension.

H. Crichton Miller, M.D.,
London.

I should like, in the first place, to thank Dr. Ross for his admirable paper, and particularly for the excellent classification of the "innominate protestants." I am glad to consider myself a member of this group. Dr. Ross said that the problem of the psychotherapist is, "Where are the roots of the trouble?" I venture to differ; for it appears to me that this is not the problem at all: the problem is a pragmatic one. The business of the psychotherapist is to restore the patient to social efficiency, and to do so with the minimum amount of treatment compatible with the maximum result. Let me, for instance, take the case quoted by Dr. Ross of a diabetic who was obsessed by a fear of laryngeal cancer. Dr. Ross appears to have cured him by a therapeutic conversation in an hour or less. He claims that this result could not have been bettered, and that the man had no further trouble for the rest of his life in this direction; that the lightning cure was therefore justified by the result. But Dr. Ross had no right to infer from his test that the trouble was so superficial and that the patient "repressed nothing." That seems to me impossible; we all repress; and I venture to think that this patient had a great many repressions, some of them, no doubt, responsible for his inordinate fear of laryngeal cancer. Would Dr. Ross, if he had faced a similar condition in a young man, say in his twenties, have been satisfied with the lightning cure, and felt that nothing more was needed in the way of treatment? Surely not. He would have felt that the man with his life before him had to make a very different adjustment to life, and that no superficial treatment could possibly be regarded as adequate. Similarly with such a case as Dr. Hurst has mentioned of hyperemesis actually endangering life. Obviously Dr. Hurst's treatment was justified—that is to say, it produced adequate results under the circumstances. But I venture to suggest that if a woman can suffer from hyperemesis of so serious a degree, and if that condition can be cured by any rapid therapeutic method, she is a woman whose adjustment to life is very far from perfect; and when the circumstances made it possible, I would suggest that her emotional life should be treated in a very much more fundamental way.

It has already been pointed out that the Freudians expose themselves to very just criticism by the length of the treatment they adopt and its elaborate nature in every case that they handle. It seems to me perfectly reasonable that this criticism should be made without necessarily contesting the validity of their theory of pathogenesis. Every one of us has seen cases, especially those of elderly hypochondriacs, in which it is perfectly obvious that the roots of the trouble go right back into the infantile life. The patient may have a very bad adjustment to life, and from the point of view of social efficiency may be a relative failure. His mental life is perhaps a mass of repressions, projections, and transferences of every kind. But the man who starts to pick that life to pieces is devoid not only of therapeutic insight but of common sense; because by this meddling he will unquestionably break up the poor adjustment that the patient has already attained to, and the last state of that patient will be worse than the first. Cases treated by psycho-analysis must be justified in the mind of the physician not by the fact that the roots of the trouble are deep down, but by the fact that no easier or speedier treatment would benefit the patient to the maximum extent.

Tom A. Williams, M.D.,
Washington.

Like every other physician the psychotherapist, before attempting to cure, must comprehend the processes taking place in his patient. The psychological disturbances with which he deals can all be expressed under the ruberic deconditioning—that is maladjustment, not necessarily in action, but as regards the sense of personal satisfaction with a situation. For instance, although no abnormality of behaviour may be evident, a person alone is in terror; to face another imports anxiety; blood brings faintness; to cross a street, dread; to contemplate, apprehension; to bear a child, horror; to speak publicly, panic and tremor; to decide induces rumination; to review acts causes remorse; and so on. Many persons endure for years with these handicaps, but eventually there is manifested a general unhappiness, along with inefficiency.

It has been alleged that the repression of such painful affects is the cause of psychoneuroses. Never have I found this. In many instances there is no attempt to repress at all, and when there is the repression is a consequence of anxiety, and not its cause. In some cases, however, there is a further anxiety lest what is felt to be a shameful weakness become known to others; but this again is a secondary and not a primary repression.

The basis of the neurosis is always the clothing of a situation with a distressing emotion which should not appertain in the eyes of common sense. The patient is unaware of the *cause* of the discrepancy, and is unable to reconcile the apparent absurdity. It is not always a defence. Guiding him to a solution is the rôle of the psychotherapist.

That it offends common sense is no valid argument against a doctrine; although in most minds that is the objection to the theory of Freud and his school. Even the flimsiness of the inductions on which depend their dogmas is not more than a ground for scepticism. However, even the extravagant use of deductive methods has failed to maintain their own adhesion to the most cardinal of their tenets—that is, the sexual origin of the neurosis. It took, however, the colossal psychopathological data of the war to remove an obstinacy which had refused even to listen to previous studies. (*Contrasts in Psycho-analysis*, 1911. *Prevention of Suicide*, 1912, etc.)

A second tenet in course of destruction is the censor. I need add nothing to what Dr. Rivers has written of this highly artificial psychological interpretation. The personification of forgotten or disused precepts into a mystical "unconscious" has not yet received the scepticism it deserves, so greatly are psychopathologists of this generation permeated by the teachings of Janet, based upon data accumulated in a period of high credulity regarding the very special qualities of hypnotic states. So dramatic and attractive are his data that they tend to numb criticality. Behind them all, however, lurks the shadow of the mythomaniac, already clear as regards the similar data of Morton Prince. A safer basis of study would be the proposition that complexes capable of disturbing the affectivity and influencing behaviour are always conscious, even although their groundwork may not be in mind. What unconsciousness there is, is not in his patient, but in the doctor who believes in it. Even then, however, its unfolding takes place under a proper anamnesis in the fully conscious state, provided that the patient's tendency to try to avoid that which is inconvenient or unpleasant, or of which he is ashamed, is changed by the skill of the interrogatory into a co-operative acquiescence without reserves. By this method the groundwork is quickly reached without dream analysis, without artificial associational expedients, and therefore without any appeal to a so-called non-conscious.

It is true that in each of our lives there are thousands of incidents submerged to which access can be gained by persistent associational dipping. It is also true that many of these will give a more complete view of the avenue of our personal development, but it by no means follows that any of these has the active or important influence which has induced maladjustment. It must be remembered, however, that to a later incident former ones may become

attached by associational recollection. This fact is the basis for false induction of displacement, and the still more false generalization of floating affectivity. What one disapproves of is not the analysis but the doctrine of one of its exponents.

Whilst it is true that there are affective states which become associated with concepts with which they have logically nothing to do, yet these are primitively physiological disturbances which are all too readily attributed by the sufferer to a psychological circumstance of the moment. It is a familiar mechanism during and after confusional states (*Management of Confusional States*, 1916). The only physician who will fall into the error, however, is the psychogenist *à outrance*, who is not truly an expert neurologist, a *sine qua non*.

The negation of Freudian doctrines must not connote as an alternative the adoption of such neophytic methods as suggestion in hypnosis, now scarcely spoken of. Nor is it desirable to fall back upon the equally crude direct or indirect suggestion, sometimes still utilized under the shelter of the name of Babinski, in spite of the fact that he himself has specifically spoken of persuasion in the treatment of hysteria, even though he himself makes no claims as a therapeutist, having devoted nearly all his energies to differential diagnosis.

Although induced by a mechanism of suggestion, symptoms removed by suggestion cannot be assured from relapsing, as I have constantly pointed out since 1908. The symptom itself should rarely be attacked. Psychic opinion is no more curative to the soul than is morphine to the body. On the contrary, symptoms which disappear in consequence of the ascertaining and removal of their cause and an understanding of their mechanism, followed by psychological construction, never relapse; at least none of mine have done so in a period of over twelve years, during which I can trace most.

The aim of psychotherapy, then, is much deeper than the mere removal of a symptom. That its end can be accomplished without hypnosis, without suggestion, without use of Freudian methods or hypothesis is demonstrated, and was so even before the schism of Jung, with whose special doctrines we also have nothing to do.

Furthermore, the time required for adequate exploration of the subject's psyche and the readjustment of the patient's difficulties instead of being reckoned in months can be measured in days, requiring more often less than ten days, never more than a month, for the patient to acquire adaptive power. Psychotherapy eventually can be discussed in general circles; but experts must first agree as to principles.

William Brown, M.D., D.Sc.,
London.

I am in agreement with almost all that Dr. Ross has said in his excellent paper, but since he has referred explicitly to me in one paragraph, I should like to limit my remarks to an explanation and justification of the view which he criticizes. While treating shell-shock cases in the field in France, I found that a large proportion of the cases showed a more or less extensive amnesia for events that had occurred immediately after the shell explosion. These patients were easily hypnotized, and under light hypnosis the lost memories could be immediately restored. But I soon discovered that if I recalled at the same time the terrifying emotion that had originally belonged to these experiences, there was a tendency for the accompanying hysterical symptoms—deafness, mutism, tremors, paralysis, contractures, etc.—to disappear spontaneously, without the necessity of giving explicit suggestions to this end. The more complete I made the working-off of the emotion, or the "ab-reaction," to use Breuer's original term, the more complete was the recovery. In cases seen by me previously in England, I had also restored lost memories by light hypnosis, but had not produced intense emotional revival and had not seen collateral symptoms disappear. But again, towards the end of the war, I was seeing more chronic cases in Scotland, and then found that amnesias of longer standing could be cleared up with accompanying ab-reaction of the emotion of fear; and that with the ab-reaction there was observable that tendency for the collateral symptoms to disappear at the same time such as I had observed so frequently in France.

These are observed facts, and I endeavoured to show in a paper in the British Medical Journal last year[1] that they could be explained in terms of a theory of reassociation. The amnesic patients fresh from the trenches showed a two-fold dissociation, namely, (1) a dissociation of the memory of events immediately following upon the shell explosion from memories of earlier and later parts of the patient's life; and (2) a dissociation of these memories, as mere intellectual awareness, from the accompanying emotional reaction of fear—tremors, sweating, mutism, paralysis, etc.—which are of a physiological nature. The physical reaction of fear, thus dissociated from its psychical counterpart, had become relatively permanent instead of being transitory. The patient no longer felt the emotion of fear—at least, of just that fear which the shell explosion had aroused—but did show its physical manifestations in the form of hysterical symptoms. By re-arousing the whole of the lost experience in all its emotional vividness I overcame *both* dissociations. The physical manifestations became linked up with their psychical counterpart, and this in its turn was linked up with earlier and later memories of the patient's life. In this way the mind was completely resynthesized, and the physical symptoms came once more under the sway of the entire mind (the complete personality) and could disappear.

The process, however, seemed to involve an actual working off of repressed emotional energy, and from hypnotic experiments which I have carried out on the revival of early emotional experiences I am inclined to believe in the possibility of past emotions being retained as such below the threshold of consciousness, and that in certain cases earlier memories may be overburdened with these emotions, and that the overburdening can be corrected by re-arousing the memories and providing an opportunity for the emotions to become "worked off." This is not Freud's view. Freud does not believe that past emotions can be remembered as such.

In addition to ab-reaction, I would agree with Dr. Ross in advocating the thorough thinking out of the whole psychological situation by the patient, so that he may be brought eventually to understand himself thoroughly. This process might be called autognosis, or self-knowledge. The patient is encouraged to obtain as objective a view of his entire mental condition as is possible.

Dr. Maurice Nicoll (London) insisted that it was now necessary to make a distinction between psycho-analysis and analytical psychology. Psycho-analysis was a term that should only be applied to the method used by whole-hearted followers of Freud—as Freudians very rightly insisted nowadays. No proper understanding of neurosis could arise without analysis, but there were other analytical conceptions of the unconscious than that of Freud. The great splitting point arose over the nature of the unconscious. Freudians believed it to be only the pleasure-principle—the auto-erotic; this was antagonized by the endopsychic censor which was not in the unconscious. So they reduced all patients to the auto-erotic. Dr. Nicoll believed that the unconscious contained the check to the pleasure-principle itself, as well as the pleasure-principle, out of which was developed the constructive side, which antagonizes the auto-erotic. It made an enormous difference in the outlook of posterity if it took one or other view as true. In this way Freud and Jung had become almost legendary hero-demon figures, owing to the projection of this unconscious significance on to them, and extraordinary tales were heard about them.

Dr. H. Devine (Portsmouth) emphasized the fact that while an intensive psychological study of the psychoses is of the utmost value in leading to an understanding of the mechanism, origin, and meaning of the symptoms, yet he had not found that in the true psychoses—for example, dementia praecox or paranoia—such studies have any influence on the course of illness. Very striking cures occurred in these cases, but the patient himself solved his own conflicts in a manner not clearly understood. As regards the question of psychotherapeutic treatment, it would seem to be necessary to approach the subject from the point of view of personality conflicts, wishes, needs. A neurotic symptom was one method of reacting to a situation which the individual could not face—it was a

[1] "Hypnotism, Suggestion, and Dissociation," British Medical Journal, June 14th, 1919.

biological defence mechanism. All treatment must therefore aim at finding out this situation and explaining it to the patient who did not realize it himself, and indicating to him the necessity for making an efficient adaptation to life and helping him to do so.

Dr. GORDON HOLMES (London) pointed out that as psychotherapy, in the true sense of the term, had been practised and its value recognized as long as medicine had existed as a science, this discussion should be limited to the use of those methods that have been recently introduced, and especially to those based on the teaching of Freud and Jung. He referred, in the first place, to the harm that might be done by attempts to trace all neurotic symptoms to sexual causes, and mentioned the cases which he had seen during the last year of five unmarried women of the educated class who had been told that their complaints were due to incest, or to sexual relations in early life with brothers or other male relatives. All five had not only failed to obtain benefit from prolonged psycho-analysis, but had suffered severely from the suggestions that had been made to them. They all recovered later under more rational treatment. He entered a vigorous protest against the indiscriminate employment of such methods, and especially against their use by inexperienced "specialists," which was apparently becoming more common and widespread. In the second place he questioned the value of this form of psycho-analysis as a mode of treatment. As it had been extensively employed in the treatment of the psycho-neuroses of war, it should be possible to obtain definite figures to determine its worth. And since psycho-analysis professed to be a radical method that removed the roots of the trouble, it was only fair to ask what proportion of soldiers treated by it had been returned to full active service during the war, and what proportion of pensioners who had been only psycho-analysed according to the methods of Freud and Jung had resumed their civil occupations without any claim to further pensions.

Dr. W. A. POTTS (Birmingham) wished to corroborate what had already been said about the value of simple psycho-therapeutic methods in ordinary practice, especially obstetric work. In many cases pernicious vomiting, and also failure of the milk supply in otherwise healthy women, could be put right by one treatment. Of course an emergency only was dealt with as a rule, and the underlying morbid condition was left untouched. But it was a great advantage to relieve symptoms, which was often all that could be done in many provinces. He agreed with Dr. Miller that treatment ought to be continued, and the patient's character built up; but that was a counsel of perfection which could not always be carried out. Complete treatment usually took a considerable time, and the same held good in criminal cases. In many criminal cases, especially those concerned with the young delinquent, a simple analysis would often establish that there was some mental conflict, in consequence of which the prisoner was not fully responsible. The simplest example of such a conflict was that afforded by the wrong occupation. Sometimes the essential cause was unreasonably strict discipline of one or both parents. But far the most frequent cause in young criminals was a sexual one. Dr. Potts said that he was not a Freudian and did not, as a rule, in his practice find a sexual cause of mental conflict. But no one could work among juvenile delinquents without realizing the importance of the sexual factor. There were not necessarily immoral acts, though they were frequent, especially in the public parks; sometimes all that had happened was that at a critical age, or at a very early age, when there was previously complete ignorance and innocence, a large amount of sex knowledge had suddenly been imparted in the wrong way, instead of being gradually unfolded in the right way. The objectionable words and ideas haunted and terrified, and might lead to impulsive stealing. Some of these cases would say the impulse was irresistible. A simple analysis was often sufficient to elucidate these cases, but of course they required prolonged treatment to get them right. It would therefore be a great advantage to have some system of social service, such as existed in some of the big cities in America, linked up both with the hospitals and the courts to see that all the necessary treatment was carried out.

Dr. W. J. TYSON (Folkestone) maintained that psychotherapy had been exercised for many years past in a simple way and yet with considerable success. The present system was often most complicated, and was generally carried out by so-called specialists. It seemed to him necessary that men who practised this method should be honest—also that as the sexual system was talked about so much, women should be consulted and asked much more than at present to take a serious part in this discussion.

Dr. PRIDEAUX remarked that Dr. Gordon Holmes had asked the Section to consider the questions as to whether (1) psycho-analysis did harm, and (2) whether it could really produce any results. He therefore felt it his duty to join in this discussion. In his opinion psycho-analysis could certainly do harm when practised by those ignorant of all psychological principles, just as a surgeon with no knowledge of surgical technique could do harm. Dr. Prideaux's position was that of an investigator. He professed to no absolute knowledge. All he could say was that he had been treating patients who had been already treated by most of the speakers that morning, and he expected they had been treating his. It became, then, a question for investigation and research. Why did they get failures? His experience showed him that failures came under two classes. On the one hand there were cases (and these were in the majority amongst pensioners at the present time) in whom psychological treatment would never do any more than temporarily relieve gross symptoms—they never had been and never would be able to face reality. They were of a high-grade type of mental deficiency, and to them Janet's theories applied. On the other hand, there were cases who were suitable for and needed psycho-analysis; these cases owed their illness to the presence of infantile complexes. His experience had shown him that there were cases exactly as described by Freud which cleared up only as the result of analysis. Much had been said of the sexual factor, and he would suggest that there were not more than ten persons in the room who understood what Freud meant by sexuality. When physicians had learnt that they would find out from their own experience the truth of Freud's principles. They applied to a certain group of cases, but not to all. It was the business of those present to find out which cases were suitable for analysis, and it must be realized that psycho-therapy for the first class of case—the deficient type—could only lead to complete failure.

Dr. J. P. LOWSON (London) was glad that Dr. Prideaux had laid stress on the fact that "we do not know." He thought it must have struck everyone who had listened to this discussion what a large number of psychotherapeutic treatments or forms of treatment there were. To Dr. Lowson the interesting point was that there was not one of them which did not sometimes work. And if they searched for the point which they all had in common it might be said that the success of each of them, when it did succeed, depended upon its leaving the patient better adapted to the actual facts of his situation—better adapted to reality—than he was before. William James said long ago that we all divide the universe in two, and that each one of us makes the division at a different point—at the point, namely, where each man's mind meets with the external world. Now the discoveries of the last hundred years had familiarized men with the fact that the reality of the physical world was something very different from our ordinary notions of it, and quite independent of these, but it was only perhaps in this century that we had begun to realize distinctly that the same thing held good of the other half of the universe, namely, the processes which went forward in our own minds. The actual process which went on in a man's mind and his notions about these processes were entirely different things, and his notions did not alter the facts. For example, in some cases of functional mutism the patient got a spasm of his larynx when he tried to speak. Anything which enabled him to get round that spasm would enable him to speak—anything, that was to say, would make him speak which adapted his activity to the actual facts of the situation in his larynx, facts of which he was naturally ignorant. But there was another side to his situation: it was impossible to treat many of these

cases without realizing that the patient made mountains out of molehills. The difficulty with his larynx was really such a molehill. Why, then, did he take it for a mountain? To answer this question, and to make such mistakes impossible to him in the future, involved some kind of exploration of the processes actually at work in the patient's mind—processes of which he was just as ignorant as he was in the case of his larynx, his notions about them bearing frequently little relation to the actual facts. Such an exploration frequently benefited the patient, but an exact knowledge of how best to carry it out, and of just what happened in his mind when it was carried out, seemed still to be lacking.

The Chairman, Dr. W. H. R. Rivers, F.R.S. (Cambridge), drew attention to the fundamental agreement which underlay the differences of opinion apt to show themselves in a discussion, and pointed out that mistakes and undue enthusiasm were natural in a study so young as the subject of psychotherapy.

THE DEFENSIVE VALUE OF NORMAL MUCUS FORMATION, AND THE THEORY OF CATARRH.

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The interesting note by Mr. Benians, entitled "Air-way Infections,"[1] draws attention to some points of physiological, clinical, and epidemiological interest that have not hitherto been accorded sufficient importance.

Certainly, physiologists have not told us much as to the conditions of mucus formation, and, by denying it the right to be called an act of "secretion," have tended to obscure appreciation of the evident purpose which our belief in the economy of nature warrants us in recognizing.

It is true that the formation of mucus is held to be an exfoliation, or degeneration, by many writers of the kind who sees, in lactation, a form of suppuration—forgetting that there is no inherent distinction between physiological, degenerative, and pathological processes. One and the same process may be (1) physiological when efficient, and conditioned by accustomed stimuli; (2) pathological when tentative, and conditioned by unaccustomed stimuli, and (3) degenerative, when a confession of failure on the part of the organism to respond properly to stimuli within the range of custom. What is physiological *now* has once been pathological, and may perhaps one day come to be regarded as degenerative.

The normal formation of mucus, then, must be regarded as physiological and purposive; in Samuel Butler's sense, it represents an intelligent act on the part of the organism. What is its purpose, and what are the consequences of failure in its due performance?

It seems pretty clear that a layer of mucoid matter must, in the first place, protect the delicately vascular underlying membrane from the direct action of atmospheric changes—changes in temperature, humidity, composition, and the like—as well as from the no less direct action—mechanical or chemical—of solids and liquids in contact with it.

Mr. Benians, however, goes further, and suggests that the mucoid layer may not only prevent the absorption and inhibit the action of bacterial ferments and toxins by and on the mucous membrane, but may actually prevent invasion of the body by the organisms themselves. If his hypotheses be well founded, the maintenance of a proper state of mucus formation becomes of great importance; and interference with such a proper state constitutes an etiological factor that cannot be neglected when discussing the origins of certain forms of ill health.

The customary view is, I suppose, that interference with mucus production is a result of bacterial or protozoal attack; the notion suggested by Mr. Benians's paper is that when from one or another cause—whether vasomotor, hormonic, or nervous—mucus production is seriously disturbed, not only may mechanical, chemical, and other agents do harm, but scope may be given to the activities of organisms which are habitual, occasional, or accidental denizens of the "mucoid layer."

There are not a few clinical facts which seem to me to support Mr. Benians's propositions.

Some years ago, when frequently dealing with cases of typhoid fever, diphtheria, and scarlet fever, I made the practical observation that oily preparations such as paraffin, applied by means of an atomizer, are far more efficacious as cleansers of the tongue, throat, and nose than is either the conventional glycerin of borax or any of the watery solutions used for swabbing and syringing. As I then said (and long clinical experience has confirmed me in the opinion) "such preparations soothe the mucous membranes, prevent breaking the surface, and inhibit the growth of organisms by encapsulating them."[2]

It seems to me that in such cases the paraffin acts by way of taking on the duties of the normal mucus when (as in the worst cases of pharyngeal infection from the point of view of absorption and general invasion) the mucous membrane is obviously "tight," shiny, and glazed.

It is precisely in these cases that old-fashioned demulcent drinks would act as Mr. Benians assures us mucilage in laboratory experiments does act, and that old-fashioned clinicians would prescribe remedies calculated to render free the "secretion" of mucus.

The chemistry of the gastro-intestinal mucus has not as yet been fully elucidated, but certain clinical facts are indisputable; amongst them this, that whilst hyperacidity is apparently associated with deficiency of mucus, gastric ulcer is rarely met with in cases of "mucous catarrh" or "mucous dyspepsia." According to Sahli[3] gastric "mucus" is held in solution by hydrochloric acid, but is precipitated in cases of hypoacidity. Mucus deficiency, then, may well be a factor to be reckoned with in the production of gastric ulcer, by reason of the exposure consequently entailed to mechanical, chemical, peptic, and sometimes bacterial agents.

So far as the intestines are concerned, we have on the one hand the fact that paraffin is at present found to be the best clinical remedy when motions are hard and dry (from absence of mucus, amongst other things) and when the mucous membranes available for inspection appear desiccated rather than succulent; whilst, on the other, the grosser intestinal parasites—tape-worms, round-worms, and thread-worms—best carry on their relatively harmless lives when protected by the excess of mucus invariably present where they are. Indeed, as everyone knows, the best way to get rid of thread-worms is to give repeated doses of those preparations of rhubarb which inhibit excessive secretion of mucus, and of alkalies which loosen what is already there; whilst, until the protecting mucus in which the head is ensconced is cleared away, no dose of male fern will do its helpful work in respect of taenia. In fact, in respect of the grosser parasites, an excess of mucus seems to act just as Mr. Benians thinks normal mucus may act in respect of "carried" bacteria.

The production of mucus in the true dysenteries is pretty clearly pathological, in the sense in which the word has been just defined, but a fact pointed out by Roger, of Paris, some time ago,[4] raises some important issues relative to the pathogeny of certain bowel diseases that should not escape notice. Roger has shown by experiment that the coagulation of mucin into such large masses as those seen in certain cases of "mucous enterocolitis" may be the result of biliary insufficiency, since, *in vitro*, bile inhibits the coagulation of mucin by the normal intestinal ferment called mucinase.[5]

Again, the protective effect of mucus is clearly seen in respect of the genital organs of both men and women; for the inhibition, under nervous influences, of the mucoid flow in women is well known, and very probably, like temporarily abnormal conditions of the male urethra due to strong drink, plays a part in facilitating actual invasion of the mucous membrane by organisms of various sorts.

It is, however, perhaps the state of the respiratory mucous membranes that is, in most respects, of greatest interest; and in the light of the hypothesis of the protective importance of the mucoid layer, the rationale of some old-fashioned clinical methods seems clear. I refer to the use of demulcents and of mucilaginous preparations generally, in the acute stages of a catarrh; to the administration, first of medication directed towards the loosening, and later towards the diminution, of mucoid

secretion; and to the care necessary to avoid premature inhibition, by opiates, of its secretion and removal.

Certainly we may wish to understand the underlying processes that affect the secretion of mucus, and if, as is perhaps the case, the primary change, in a catarrh, is not so much one of bacterial infection as a change in the physiological equilibrium of the mucous membrane that allows scope to bacterial activities, it seems likely that, when we do attain such understanding, we may come to appreciate how it is that, during the epidemics we call "catarrhal," there are associated cases and groups of cases, with affection of the cerebro-spinal system, not "catarrhal" in our modern sense, and yet a part of the "epidemic."

To Fernel, Benedetto, Ballonius, and other physicians of the sixteenth century these nervous forms of disease were alternative to those we now call "catarrhal"—whether respiratory or gastro-intestinal—and the epidemiological unity of what we now call encephalitis, myelitis, and the like with what we now call influenza was explained by them in terms of the famous doctrine of "catarrh," whereby an "excretion" of the central nervous system, if "repulsed," set up nervous disease, but, if determined to a mucous membrane, produced bronchitis, diarrhoea, and so forth.

To these physicians, then, a "defluxion" through the ethmoid safeguarded the brain against encephalitis; we, in thought, reverse the process and consider cerebro-spinal meningitis, encephalitis, and poliomyelitis as due to organisms reaching the nervous system by the ethmoid route, after having set up or failed to set up a preliminary "catarrh" of the nasopharynx. But we may well consider anew whether the factor which turns the scale to the one side or the other may not be sometimes a condition of the mucous membrane depending on vasomotor or trophic disturbances, and sometimes an alternative condition of the meningeal and cerebro-spinal structures.

In a word: although the explanations of Fernel and Benedetto may seem to us absurd, were they not right in discerning an essential and epidemiological unity between cases that seem to us, clinically, to be totally antipathic?

Again, Mr. Benians's notion, that it is possible that a primary alteration in the state of the mucous membranes may allow harmlessly "carried" micro-organisms to gain access to the blood and lymph channels and spaces, is perhaps to be collated with a rather curious passage, in Falconer's celebrated account of the influenza of 1803,[6] that seems to deserve citation. On the occasion of a *post-mortem* examination on a young woman who had died of influenza, upon opening the trachea it was observed that, "on viewing the inner membrane of the trachea with a magnifying glass, ulcers were clearly perceived at the edges of the small holes which supply the trachea with mucus, *to defend it from the acrimony of the air.*"

Now here again is an instance of an observation, worthy of attention, that has been rendered a little ridiculous by the assumption of a particular explanation. It may, however, be put side by side with what is said by Micheli, who in a very valuable paper[7] seeks to explain the "incontestabile unità fondamentale" of the many diverse clinical forms manifested during the present epidemic period by suggesting that groups of different habitual or occasional microbic habitants of the tracheo-bronchial mucosa become suddenly awakened into or permitted virulence by the supervention of a hypothetical "virus primitivo."

In Mr. Benians's hypothesis micro-organisms replace Falconer's "acrimony of the air," and an alteration in the state of the mucosa replaces Micheli's "virus primitivo."

There are obviously, therefore, several points to be considered relating to these matters which would seem not unsuitable for the application of such judicious hypothesis as may stimulate further observation and inquiry. And inquirers might be well advised to adopt as their motto the sufficiently hackneyed but nevertheless still pointed sentence of Baglivi:

Novi veteribus, non opponendi, sed quoad fieri potest, perpetuo jungendi foedere.

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A CASE OF ENCEPHALITIS LETHARGICA TREATED BY HEXAMINE.

BY

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ASHTON-UNDER-LYNE.

THE following case of lethargic encephalitis, in which recovery followed large doses of hexamine, is worthy of record, although I do not wish to attach too much importance to a single case.

I first saw the patient, a girl aged 12 years, on the evening of January 25th, 1920.

The parents definitely fixed January 17th as the day on which she became really ill, but careful inquiry elicited the fact that for quite a week previously she had been unusually quiet, had not wanted to play, and had slept a great deal. They also told me that on the last day she was at school she had gone to sleep on her desk and that the teacher had failed to rouse her, so let her sleep till close of school, and then sent her home with some other girls. She never made any complaint of headache or other pain; she simply wanted to be left alone. Gradually this lethargy became so deep that they could not get her to take food, and for several days she had nothing. For several days, too, she had passed both urine and faeces without seeming to be aware of the facts.

I found her lying in bed on her back with her legs straight down and close together; her arms were close to her sides; with bent elbows and clenched hands lying on the chest near the chin; her mouth was wide open and her eyes slightly so. She was breathing regularly, but rather deeply, though not noisily. Her face was placid but expressionless. When spoken to loudly she would open her eyes a little, and for a moment seemed to be looking at one, but then relapsed into her former state. The conjunctivae were slightly congested; the pupils were equal and reacted sluggishly to light, and there was a slight corneal reflex. When the lids were raised she moved her eyes slowly from side to side, but the movements seemed to be quite aimless, as if she did not see. There was no squint or ocular paralysis. When I came to move the limbs I found that a distinct effort was required, owing to a certain degree of tonic rigidity which involved all the muscles of the body; it could be overcome easily, and when the limbs were put into a new position they remained there for a short time, but gradually resumed their previous position. A distinct effort was required to close the mouth, and when the effort was relaxed it opened rather quickly. Attempts to move the arms from the sides, straighten the elbows, or unclench the hands met with distinct resistance; and the same was true if any attempts were made to move the joints of the lower limbs. It was not a temporary contraction of the muscles brought about by the moving of the limb, but a continuous condition and the muscles felt firm. These passive movements elicited no sign of pain or consciousness. The muscles of the neck were in the same condition; the abdominal wall was strongly retracted, the abdomen being typically scaphoid. It seemed to me that the superficial reflexes were abolished, but there was a very marked *tache cérébrale*. The knee-jerks were distinctly lively, I think exaggerated, and a slight but positive Babinski's reflex was present. In both cases the reaction seemed to be more marked on the right side. I tried to get her to swallow by placing a few drops of water on the tongue and allowing it to trickle into the pharynx, but there was no response.

There was no sign of any injury anywhere. The ears appeared to be normal. There was no oedema nor any acetone in the breath. Heart and lungs were normal. Temperature 99°.

After my examination I was standing at the bedside looking at her. Her chest was partially uncovered by the clothes when she opened her hands, grasped the clothes, and made an attempt to pull them up. It was very feeble and unsuccessful, but accompanied by a marked tremor of the hands. Her mother told me she had at times tried to do things like that, and occasionally had spoken a word or two, but they could make no sense of it.

Beyond the usual childish ailments and an attack of tonsillitis about eighteen months previously, there was nothing to note in the medical history, and she had been

thought to be very well until this illness commenced, though she was not what would be called a robust child.

The first impulse in a case of this kind is to diagnose meningitis. But the expression of the child's face, her attitude in bed, and the complete absence of pain in the premonitory stages compelled me to reject this. I had never seen a case of encephalitis lethargica, but the mental picture of it that I had formed as the result of slight acquaintance with the literature was recalled by this case. Sequelae of injury and ear disease were evidently out of the question; and so was any disease of vascular origin. There was nothing to suggest nephritis or diabetes, though unfortunately I never examined the urine. Neither did I perform lumbar puncture. It might have been difficult to do on account of the rigidity, and I doubted if one would get information of value, but it would have been more satisfactory. One could also definitely exclude any form of poisoning. However faulty my line of reasoning may have been I came to the conclusion that I had to deal with a case of encephalitis lethargica, and I gave an extremely gloomy prognosis. I knew of course that mild cases did occur, and that recovery under various lines of treatment, or with none at all, had happened, but this was not helpful.

So far as treatment was concerned, I contented myself that evening with ordering nutrient enemata, and directing that nothing should be given by the mouth as it was obviously dangerous. When I got home I looked up what literature I had by me, but found nothing I could get material help from. Hexamine seemed to be the only drug likely to be of any value, and I searched for information about it. I found there was a general consensus of opinion that it was rapidly absorbed from the stomach into the blood, and that it rapidly passed into the tissue fluids. Some said it passed into the cerebro-spinal fluid, others that it did not. Then there was also a general opinion that it only acted by liberating formaldehyde, and that it only did this in acid media. If this is so then it is difficult to see how it can be of any service either in the tissue fluids or cerebro-spinal fluid, as these are always alkaline. Then I remembered hurriedly reading an article in the January number of the *Medical Review* about intravenous injections of this substance, and looked it up. It was an abstract of an article in the *Wiener klinischer Wochenschrift* of November 6th, 1919, by F. Deutsch. In this abstract Deutsch is credited with the opinion that the bactericidal action of urotropine is much greater *in vivo* than *in vitro*; also that sufficiently large doses cannot be given by the mouth, as the stomach will reject them. He had used large doses of urotropine intravenously in acute rheumatism—as much as 90 grains daily for six or seven doses—with nothing more serious than a transient rigor and rise of temperature, and usually with no untoward symptoms at all. I came to the conclusion that this was a possible line of treatment for my case; but before finally deciding I would see the patient again. I saw her the next morning (January 26th). The condition was unchanged. The mother said that once during the night she had put her hand to her neck and said something about beads, otherwise she had lain just as I left her. I therefore decided I would try the drug, and the same evening gave her 45 grains dissolved in 10 c.cm. of normal saline in the left median basilic vein. She winced a little as the needle was passing through the skin. I noticed not the slightest change in her condition while I stayed there.

January 27th—Morning: No change in her condition; not retaining the enemata; passes urine unconsciously. Evening: No change.

January 28th—Morning: There is certainly less rigidity of the limbs and the pupillary and corneal reflexes are more lively. Knee-jerks less marked, and Babinski's test yields a feeble but distinctly flexor response. Mental condition unchanged. Gave a second dose of 45 grains of hexamine. Evening: About the same.

January 29th—Morning: Distinct improvement. Has spoken several times, and seems to have some idea of things about her. Rigidity less, and moves her limbs a little. Cannot be roused to answer.

January 30th—Morning: Still better; asks for things, and answers when spoken to, but in a weak, tremulous voice and not alertly. When speaking there is marked tremor of the jaw. Rigidity everywhere is much less; pupils react very well. Gave a third injection of 45 grains as before. Gave marked evidence of feeling the needle. She was able to swallow a little water, and now she began to have liquid food.

February 2nd and 5th: Had fourth and fifth injections respectively. From this time onwards improvement was steady and uninterrupted. She began to ask for solid food and for her toys, and in a few days was able to sit up in bed. At the end of the third week she was able to get up and sit in a chair for a short time, and was quite bright and cheerful. My last visit to her was on March 4th, when she was going about the house and quite lively. I have seen her on several occasions since. She began to go to school half-time in June, but after three weeks complained of headache, which disappeared again when she stayed at home. She seems now to be as well as ever she was.

From one successful case of this kind it is easy, of course, to draw extravagant conclusions as to the value of the line of treatment adopted. I do not wish to do that, but in any similar case, or even in a case of meningitis, whatever its nature, I should without hesitation try the method. It is only by repeated trials that the value of any treatment can be verified. As regards this line of treatment, I have satisfied myself that it can be used without fear of any serious ill effect following. None whatever followed in this case, and in certain other cases in which I have tried it, of quite different nature, I have given it with impunity, though I have occasionally seen a rigor follow, usually about four hours later, and accompanied by a rise of temperature up to 101° or even higher. The effects have always passed away in about twelve hours. I should certainly not try it in any case enfeebled either by long illness or any other cause.

In the August number of *Medical Science* there is a long series of abstracts from various sources about the disease, amongst others from certain articles by Netter of Paris, an admitted authority. He apparently regards hexamine as the best drug to use, but recommends oral administration in preference to intravenous. In this case it could not have been given that way. I do not know in what doses he gave it intravenously, and that may conceivably make a difference.

I have recently seen the master of the school she attends. He thinks she is altered in disposition and mentally, not being so bright, and wanting to keep away from the other children. Her mother says she will not go out to play with her friends as they are "so noisy."

TWO CASES OF INTESTINAL TUMOUR: OPERATION: RECOVERY.

BY

W. BALGARNIE, O.B.E., M.B., F.R.C.S.,

SURGEON TO THE FLEET AND DISTRICT COTTAGE HOSPITAL.

I HAVE had recently in the Cottage Hospital, Fleet, two cases of intestinal tumour which seem to have distinctly interesting features.

CASE I.

A. G., a widow, aged 52, with four children, a thin spare woman, accustomed to land work, gave no previous history of illness of any kind, except that she had suffered much from constipation. A few days before admission she had pain in the right lower quadrant of the abdomen, but kept at work for three or four days longer until the pain got so severe she could only work kneeling. She then consulted Dr. Alban Ward of Crondall, who found a large swelling in the region indicated and sent her into hospital.

A hard tumour could be felt a little above the caecal region; it was fairly movable laterally, and a provisional diagnosis of possible malignant disease of ascending colon was made. There was no sickness nor other signs of obstruction. An exploratory operation was advised, and in performing it the honorary secretary of the hospital, Surgeon Rear-Admiral Axford, C.B., kindly assisted me.

On opening the abdomen in the middle line an intensely hard tumour was felt, about the size of a large hen's egg, immediately behind and partly embracing the ascending colon. Although freely movable with the bowel, it had all the appearance *in situ* of malignant disease of the colon, and a decision was at once come to to excise freely. The appendix was seen to be quite healthy and some distance from the growth. An end-lateral anastomosis was made between the ileum and the transverse colon and the gut removed from the hepatic flexure to the caecum. The tumour, when cut into, was found to be of scirrhus-like hardness, but though attached to the wall of the bowel, had not invaded it.

The *pathological report* from the Clinical Research Association was as follows: "The tumour consists of a fibrous wall of granulation tissue, in the midst of which there are the remains of the appendix. There are large collections of what appear to be proliferating peritoneal cells, but no signs of new growth."

On my pointing out that the appendix had been seen to be quite healthy, an amended report was submitted as follows:

"The centre of the tumour contains an organ which shows all the characters of the atrophied mucous membrane of the appendix. In view of the fact that the organ was not involved, the only possible explanation is the presence of some intestinal diverticulum which may have become separated from the lumen of the intestine."

The patient made a rapid and uninterrupted recovery. As she is shortly about to emigrate to New Zealand I thought it advisable for her to take documentary evidence with her.

The diagnosis of diverticulitis is obviously the correct one. Unfortunately the whole specimen was not preserved for further examination, but only a section saved.

From the knowledge derived from the recent interesting discussion on diverticulitis at the Royal Society of Medicine, the case seems of interest owing to the situation of the tumour on the ascending colon and not on the sigmoid; the absence of any other diverticuli; the absence of all clinical symptoms except constipation until a few days before operation, though the growth must have been there for a long period previously; the absence of any adhesions, the growth being confined to the mesentery, and freely movable with it; the ease with which it was excised. This is contrary to the experience of most of the speakers in the recent discussion, but one feature it has in common —namely, its mimicry of carcinoma before and during operation.

I cannot help comparing it with a case we had in hospital in 1910, under my late partner, Dr. P. E. Adams. A gardener, aged about 45, gave a three weeks' history. He attributed his symptoms to the severe exertion of turf cutting. A large swelling was found in the left lower quadrant, and, as symptoms of obstruction supervened, the abdomen was opened by Mr. Bowreman Jessett. A large mass with a multiplicity of adhesions was found; a diagnosis of carcinoma was made and a colotomy was performed, and the family prepared for the worst. The man is now in perfect health, though the colotomy opening is still present, and all defaecation occurs through this.

CASE II.

H. M., a spinster lady, aged 68, had suffered for two years with abdominal pain and constipation. The latter symptom, which had troubled her most of her life, had become much aggravated. She had lost 2 st. in weight and altered much in appearance. She herself attributed all her symptoms to "rationing."

Dr. Alban Ward first saw her on October 27th, 1919. She then had abdominal pain and persistent sickness. Next day, in spite of high enemata, the symptoms were not relieved; the sickness was more persistent, and the vomit had changed from green to dirty brown. There was no abdominal distension. I saw her, with Dr. Ward, in the afternoon. On rectal examination we both felt, at the extreme tip of the finger, what appeared to be an indurated tumour. A diagnosis of high rectal cancer was made. She was at once removed to the hospital and operated on directly after arrival. An incision was made as for inguinal colotomy. On opening the abdomen the sigmoid was found quite empty and collapsed, and no growth could be detected in the rectum. Two distended coils of small intestine were found deep down in the pelvis, and delivered through the wound. One of these contained a hard growth, in the interior of the bowel, about the size of a Tangerine orange. This was obviously what we had felt from the rectum. The other contained about one yard of intussuscepted gut, which was easily reduced. An incision was made into the bowel over the growth, and the tumour, which was found to be pedunculated, was removed; as it was so intensely hard I decided for safety to resect the bowel, and an end-to-end anastomosis was made.

The pathological report showed the tumour to be a fibrolipoma.

The patient made a rapid recovery, and left the hospital within three weeks. One interesting feature was the complete disappearance of the constipation which had troubled her for so many years.

I have related this case, with the other, on account of the strong mimicry of cancer. A growth of the intestine in a patient past middle life is almost invariably diagnosed as cancer, and in ninety-nine cases out of a hundred generally rightly so.

This growth, which must have been present for many years, had apparently caused little trouble but constipation and vague abdominal discomfort, until by the weight and persistent drag it brought matters to a climax by producing an intussusception and consequent symptoms.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PERFORATED GASTRIC ULCER WITH EXTRA-PERITONEAL ESCAPE OF CONTENTS.

A MAN of 47, who gave a history of indigestion extending over several years, was admitted to Duke Street Hospital on January 17th. The night before there had been sudden onset of severe epigastric pain, with sickness and vomiting.

On admission he was pale and anxious-looking, and complained of severe pain in the epigastrium, extending round to the back on both sides. The epigastrium was tender to palpation, and the abdomen was flat, rigid, and board-like. The temperature was 99.2°, the pulse was 140, and the respirations were 36. Dr. Scott, the resident physician, reported some dullness at the bases of the lungs posteriorly, and also suggestions of friction. These signs were not clear but pointed to the possibility of acute basal mischief in both lungs. The diagnosis was thus uncertain, but as the man was obviously very ill, and the doubtful lung signs did not appear to account for the condition, an exploratory laparotomy was made. The abdomen, opened in the middle line above the umbilicus and rapidly explored, was found to be perfectly normal; this applied to so much of the stomach as could be seen, both anteriorly and posteriorly. When traction was applied to the stomach in order to bring the lesser curvature into view, the patient suddenly stopped breathing. As the anaesthetist sharply compressed the chest with a view to re establishing respiration, there was a sudden gush of a quantity of characteristic gastric fluid from the region of the diaphragm, and respiration was restored. The stomach being brought further down a large ulcer was found on the lesser curvature, close to the point of entrance of the oesophagus. The ulcer was dealt with in the usual manner; the parts were carefully cleaned out, and packing was inserted. The patient made a slow but uneventful recovery, and was discharged well in April.

The interest in this case lies (1) in the difficulty of establishing a definite diagnosis between possibilities of thoracic and abdominal affection—the basal dullness was probably due to the diaphragm being pushed very much upwards, and the friction to spread of infection through the diaphragm; (2) in the normal condition of the peritoneal cavity—it would have been very easy to conclude from the exploratory operation that the mischief lay in the chest, and that the abdominal cavity was free from infection; (3) in the rarity of the condition. Perforating ulcers are generally classified as affecting either the greater or lesser sac; but in this case, owing to its peculiar position, the ulcer opened on a small portion of stomach uncovered by peritoneum, and discharged between the layers of the lesser omentum; the discharge was therefore strictly extraperitoneal. To this fact recovery was doubtless in great measure due, as perforation had occurred twenty-four hours before operation.

JOHN A. C. MACEWEN,
Visiting Surgeon, Glasgow District Hospitals;
Assistant Surgeon, Glasgow Royal Infirmary.

EXPULSION OF FULL-TERM FETUS WITH UNRUPTURED MEMBRANES.

I THINK the following case may be worth recording, as I am sure it is of rare occurrence. I was called at 1 a.m. to a multipara, aged 42—fifth pregnancy—living in a village three miles away. The message I received was that the baby was born, but they did not like the look of it and dare not touch it. I arrived about 1.30 a.m. and found that the placenta, with an unruptured bag of membranes containing a full-time fetus, had been expelled complete. The child, which weighed about 5¾ lb., was of course dead, but it was born alive, as the woman with her noticed the movements. The history was that the patient had only three or four violent pains and the fetus was expelled; there had been little haemorrhage, and when I arrived the uterus was firmly contracted.

Hitchin. JAMES H. GILBERTSON.

A PASTEUR institute has been founded at Manáos, Brazil, under the direction of Professor Astrolabio Passos, Director of the University.

AN International Institute of Anthropology has been founded at Paris. The first general meeting will be held at Liége in September, 1921.

Reports of Societies.

THE BASAL GANGLIA.

THE first meeting of session 1920–21 of the Royal Medico-Chirurgical Society of Glasgow was held in the Faculty Hall on Friday evening, October 15th, when Professor W. K. HUNTER delivered the presidential address, the subject being "The basal ganglia: their functions and diseases." Professor Hunter first discussed the anatomical relations of the ganglia, and quoted the most recent observations, following out in detail the tracts and fibres passing to and from the ganglia, illustrating the points by diagrams and photographs. Their microscopical appearance and the grouping of the cells composing them was also referred to. In dealing with the functions of the basal ganglia, it was pointed out that these structures were phylogenetically as well as embryologically much older than the cerebral cortex, and reference was made to the evolution of the ganglia and tracts. In the lower vertebrates the basal ganglia appeared to represent the higher centres of the brain, where the optic thalamus constituted the receptive centre for afferent and the corpus striatum the centre for the direction and regulation of efferent impulses. Ascending the animal scale, the basal ganglia became subordinated to higher centres although the optic thalamus still received sensory impulses, and the corpus striatum would seem to regulate to a certain extent automatic and associated movements. In considering the relationship of these lower and higher centres the case of the optic thalamus and the cerebral cortex was first taken up. Was the destination of our various sensory impulses the thalamus or the cortex? The study of cases of what was called Dejerine's syndrome gave an answer. Here there was a lesion in the thalamus which interrupted the sensory fibres passing from the thalamus to the sensory area in the region of the post-central gyrus, and also the efferent fibres coming from the cortical area back to the thalamus. According to Head and Gordon Holmes, who had studied a number of these cases, the thalamus was the centre for painful and tactile impulses, for the appreciation of heat and cold, and of heat apart from cold, and also for the vibration sense. Appreciation of touch and temperature seemed to be cortical, for they were lost in Dejerine's syndrome. Questions of comparison were determined by the cortex, as were appreciation of posture and passive movement, which were lost in this syndrome. Further, the cortex focussed attention on sensation and might inhibit sensory impulses which reached the thalamus. The lessening of this inhibition would permit of impulses reaching consciousness which would not do so under normal conditions. This was offered as an explanation of the subjective pain and discomfort on one side of the body which was a feature of the Dejerine syndrome. The symptoms of disease of the thalamus would, of course, vary with the exact seat and magnitude of the lesion.

Diseases of the corpus striatum were next reviewed, and evidence was offered showing that paralysis agitans is probably due to disease of this body. The symptoms of this disease are recognized in three forms: (1) the presenile and senile, (2) the symptomatic, and (3) the juvenile. In the first two, vascular changes were found in the corpus striatum after death; in the juvenile form the large ganglion cells of the globus pallidus and their neurons were the seat of primary and progressive atrophy. So also with the progressive lenticular degeneration of Kinnier Wilson, where the symptoms had a certain resemblance to the juvenile cases of paralysis agitans, but where the duration of the disease was short and the termination always lethal. *Post-mortem* examination had shown a symmetrical and bilateral degeneration in the corpus striatum. Again, in Huntington's chorea the pathological anatomy as described by Hunt showed that this was a disease of the same type as the juvenile form of paralysis agitans, the difference being that in the former it was the smaller cells, whilst in paralysis agitans it was the larger cells of the corpus striatum which had undergone degeneration. A fourth disease with its lesion in the corpus striatum was primary, idiopathic, or double athetosis, sometimes called the Vogt syndrome. Here the larger as well as the smaller cells of the caudate nucleus and putamen were destroyed. The lesion produced athetotic movements of practically all the voluntary muscles, increased by voluntary movement. Surveying these four diseases one might conclude that the essential symptomatology in lesion of the corpus striatum was rigidity, tremor of the paralysis agitans type, choreic movements, athetosis, and mobile spasm. The corpus striatum, therefore, was a centre with certain co-ordinating and inhibiting functions, controlling associated and automatic movements. The lecturer concluded with some speculations as to the presence in the central ganglia of centres for the emotions as well as for the various viscera, and pointed out that lesion of the optic thalamus might cause loss of emotional movements as expressed by the facial muscles, etc., while such loss did not occur with lesion of the corpus striatum. At the close of the meeting a very cordial vote of thanks was awarded Professor Hunter for his interesting address.

AT a meeting of the Manchester Medical Society, held on October 6th, with the President, Professor R. B. WILD, in the chair, Dr. R. C. HOLT read a paper entitled "Sunlight as a cause for disease." Dr. L. SAVATARD read a paper on "Diagnosis of early epithelioma of the skin" (illustrated by numerous lantern slides) in which he drew attention to the absence of illustration of these early lesions in either dermatological or surgical textbooks. He dealt with this differential diagnosis from vasal-cell carcinoma (rodent ulcer) both in the clinical and pathological aspects. The PRESIDENT showed photographs of two cases of acanthosis nigricans, two cases of actinomycosis, and of a case of unilateral multiple naevi.

Reviews.

MALARIA.

THE book entitled *Malaria at Home and Abroad*,[1] written by Lieut.-Colonel S. P. JAMES, I.M.S.(ret.), now medical officer for malaria to the Ministry of Health, makes an opportune appearance. Malaria loomed large during the war, and many young medical men were then brought into contact with it for the first time; large numbers of demobilized soldiers are still suffering from the disease in England, and it is essential that the home practitioner should have much more than a superficial acquaintance with the subject. By preparing this book, which is a fuller version of an article already published, entitled "Practical points in the study of malaria, and its diagnosis, treatment, and prevention," Colonel James has filled a real want. The scope of his treatise is wide, and all the ten chapters deserve careful study. After a definition of the disease, and an account of the factors concerned in its spread, he describes the practical study that must be undertaken with regard to the parasite in man and the characters and habits of mosquitos; a malarial survey of England is followed by a similar survey, with epidemiological observations, of the disease in the tropics, and there are chapters on diagnosis and treatment. The last chapters deal with the prevention of malaria and the control of mosquitos. The chapter on symptoms will repay careful study, as will that on treatment, which is short and concise. The treatment of the attack is first dealt with, and then after-treatment. The latter is a very important factor in the case of large numbers of men now in England who are and will be subject to malarial relapses for some years to come. The different methods of treatment are given in detail.

Quinine prophylaxis—a point upon which so many authorities differ—is dealt with in a judicious manner; polemical discussions are avoided, and it is shown that there is a right and a wrong way of giving the drug; he believes that the best prophylactic results will be obtained by taking a 5-grain dose of quinine every evening about an hour before sunset, and a second dose of 5 grains about midnight. A dose of quinine taken in the morning is too late to destroy the sporozoites which were injected the previous evening, and too early to destroy those which will be injected during the coming night. This is a very

[1] *Malaria at Home and Abroad.* By S. P. James, M.D., D.P.H., Lieut.-Colonel I.M.S.(ret.). London: John Bale, Sons, and Danielsson, Limited. 1920. (Double cr. 8vo, pp. 245; 104 figures, 1 coloured map. 25s. net.)

important and crucial statement; probably the poor results that have followed many of the so-called quinine prophylaxis methods are thus to be explained. There is no doubt that quinine prophylaxis properly carried out is of value, especially in civil life, though on military service it may fail entirely, owing to the exigencies of the service and the impossibility of escaping multiple and repeated infections. We would gladly say more of the interesting matter dealt with in the other chapters—on the suppression of mosquitos, on mosquito-proof houses, and other matters—but the reader must dip into those pages himself, and will obtain great advantage from them. The illustrations are excellent, the printing is clear, and the paper good. It is a first-class work, excellent in every way.

OPHTHALMOLOGY IN GENERAL PRACTICE.

In ophthalmic literature nothing quite similar to Maitland Ramsay's *Clinical Ophthalmology for the General Practitioner*[2] has, so far as we know, been published before in this country, though one or two works on rather similar lines have appeared in the United States of America.

The author, who spent ten years in general practice before he took up ophthalmic surgery, disclaims any intention of producing a book to take the place of the systematic treatises on ophthalmology; his volume is purely clinical, deals with the symptomatology of eye diseases, and aims at presenting the subject to the general practitioner as the latter meets it in daily practice. Though not a textbook in the precise sense of the word, it is nevertheless a book that will amply repay the reading of it, and the men in general practice for whom it has been written will owe the author a debt of gratitude for it.

The descriptions of the various conditions are good, and the author's advice is nearly always judicious and sound; we venture to think that few would be inclined to criticize adversely the practical common sense of the advice contained in this work; therapy and interventions of a doubtful or hazardous nature, if mentioned, are always mentioned with a caution.

The first chapter, on methodical examination, is excellent, as are also many of the other chapters, notably those on the clinical significance of a hard eye, ophthalmia neonatorum and its consequences, serpiginous ulcer of the cornea, and those on injuries. A feature of the work is the really excellent section at the end on therapeutic notes and formulae; the Greek and Latin derivations are relegated to a glossary—an excellent place for them.

The publishers have done their work well, and the text is remarkably free from typographical errors, the only amusing one which we found being "Staung's papilla" in the chapter on the ophthalmoscope in general medicine.

We congratulate the author on having produced a thoroughly practical book—one that will form a welcome addition to any medical man's library.

TUBERCULIN IN GENERAL PRACTICE.

The great increase in the incidence and mortality of tuberculosis since 1914 has served as an object lesson to confirm most of the etiological theories that have been slowly gaining acceptance since the true nature of the disease became recognized. Among the many textbooks of treatment published during the past twenty years that of Bandelier and Roepke has always held a prominent place. A tenth edition of their book[3] has now appeared, in which the value of tuberculin is more than ever insisted upon. The theory of the reaction and its therapeutic effects are discussed in the earlier part of the work with the customary Teutonic thoroughness, a large number of untenable views and suggestions being quoted and duly demolished at great length. The value of "tests" is closely examined, and illustrated in a few coloured plates, but the greater part of the work is devoted to the therapeutic aspects of the subject, and the very numerous and varied methods of applying tuberculin are minutely described and discussed as regards their action in general, and also as to their special effects upon the disease in individual organs.

To the reader who may be already well versed in tuberculosis lore the conclusions summed up in the final chapter will be of chief interest. Imbued with unbounded faith in their own experience, the authors are somewhat impatient of criticism, and maintain that the tardy recognition of the views they hold has delayed success in dealing with the disease as a whole. Much of this delay they believe to be due to faulty observations, leading to mistaken conclusions; and as an instance of this they point to the alleged presence of active tubercle bacilli in the blood stream after tuberculin injections. They maintain that the acid-fast bacilli often found in blood are to be regarded as non-virulent forms, and in any case unimportant as regards the course and prognosis of the disease.

Assuming that the value of tuberculin is now fully accepted, they regard sanatorium treatment as a preliminary step towards preparing the human soil to receive the good seed which is in future to be supplied to the patient in his own home and no longer in the consulting room of the specialist. The family practitioner is to undertake the responsibility for correct interpretation of the instruction given him in the course of the 485 pages contained in the textbook before us. But he will probably be at a loss to decide which authority to follow, since no less than 413 are quoted. In the multitude of counsellors there must doubtless be much wisdom, but for practical purposes it should be presented in a more concise form, and only such methods as have been proved to be successful in a large number of cases should be recommended for general use.

Some of the theories hitherto accepted as regards the blood changes after inoculation are undergoing reconsideration, and the moment has certainly not yet come for the general acceptance of any but those which have stood the test of time. The German writers do not appear to be inclined to accept the theory of auto-inoculation, by which so much of our home treatment is regulated, preferring the graduated dose to the unknown quantity; but they are equally alive to the meaning of the reaction, whether it be produced from within or without.

IMAGINATION IN MEDICINE.

There never was a time when armchair philosophers were more at a discount in medicine than they are now, and yet we dare to believe that never at any period were thinkers more needed than to-day. We have become worshippers of new facts and sceptics as regards new ideas and principles; our bookshelves groan with the files of new observations piled on them year after year. We need in all departments of medicine—indeed, in all branches of biology—that form of synthetic imagination which, brooding over our harvests of facts, will bring order out of chaos. It is a task which men trained in our modern departmental scientific laboratories do not dare to embark upon; yet it is one which has been essayed with success by a professed writer of fiction—Mr. Morley Roberts. We marvel at the completeness with which his contemporary Mr. H. G. Wells has surveyed the origin of man and his civilization, but in *Warfare in the Human Body*[4] we have a task accomplished of even a higher order. Many readers of this Journal, as was the case with the reviewer, did not associate Mr. Morley Roberts, who has contributed to its pages instructive and intimate articles on immunity and vagus inhibition, with the writer of sea stories; it seemed impossible that a writer of fiction could handle so expertly the problems which are now engaging the minds of medical men. Yet those who have followed Mr. Roberts's career, who know *The Western Avernus*—his first book, published in 1887—a tale of his youthful vagabondage in wild America; his story of *The Flying Cloud*, a record of his time before the mast; his later novels, *Time and Thomas Waring* and *The Hearts of Women*—medical and psychological studies—cannot be

[2] *Clinical Ophthalmology for the General Practitioner.* By A. Maitland Ramsay, M.D.; with foreword by Sir James Mackenzie, M.D., F.R.S. London: Henry Frowde, and Hodder and Stoughton. 1920. (Roy. 8vo, pp. xx + 500; 20 plates, 11 coloured. 42s. net.)

[3] *Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose.* Für Aerzte und Studierende. By Dr. Bandelier, Medical Superintendent of the Scharzwa'dheim Sanatorium, and Professor Dr. Roepke; with a Preface by the late Professor R. Koch. Tenth edition. Leipzig and Würzburg: Curt Kabitzsch. 1920. (Sup. roy. 8vo, pp. 485 + xxxvi; illustrated. M.48; bound, M.57.60.)

[4] *Warfare in the Human Body: Essays on Method, Malignity, and Allied Subjects.* By Morley Roberts. With an Introduction by Professor Arthur Keith. London: Eveleigh Nash Company, Ltd. 1920. (Med. 8vo, pp. 238. 18s. net.)

surprised to find him appearing in his latest work as a serious student of the most recondite of all subjects—the secrets and mysteries of life itself. All along he has been a student of the realities; in his latest work, when discussing the action of the vagus on the heart, he goes back to observations made on the beating heart of a shark exposed on the deck of a sailing ship in a tropical sea, to show that diastole is just as positive and as controlled an act as systole; he cites the mate's voice, as it times the pull of a crew, as a "pacemaker"; he uses the change of watch to exemplify the mechanism of reflex inhibition, and when postulating the important rôle which cannibalism has served in the evolution of early man refers to the "man-eater" he knew when camped in the Selkirks, British Columbia.

The conception of the human body—or of any animal or vegetable body whatsoever—as a confederation, republic, or society of individual units has lost its vogue in modern times; there is a consensus of opinion among students of science that the bonds which knit together the organs and cells in a living body are of a different order from those which weld men, women, and children into a community. *Warfare in the Human Body* will go a long way to rehabilitate the old conception. Mr. Roberts has grasped and expounded the idea that whether we are politicians or psychologists, anatomists or architects, bacteriologists or botanists, physiologists or novelists, pathologists or farmers, medical men or midwives, we are all students of the same subject—the manifestations of living protoplasm. For him the unicellular protozoon elaborating its shell is carrying out an operation paralleled by the erection of a glorious Gothic cathedral by a company of mediaeval monks; it is a step—indeed a long one—from the simple amoeba to the nerve cells of the human cerebral cortex, yet it is one, as Mr. Morley Roberts reminds his readers, which is taken in every human fetus; in a few months the progeny of the human ovum have become transformed into cortical nerve cells—the basis of human imagination. But instead of using the living manifestations of the protozoon to illuminate human action he does the opposite; he tries to fathom what is going on in the ultramicroscopic organism by studying action in living communities where the units are larger and can be seen by the naked eye and by all. At first he went to biological and medical laboratories in search of facts to help him to unravel the laws which must regulate the behaviour of human beings living together in organized communities, but soon found that the student of human society had more to give to the trained biologist than to get from him. Whether it be a nation or a multicellular body of an animal, continued life is not possible unless there be a mechanism by which every unit can control every other unit, and in turn be controlled. Starling's doctrine of hormones gave us the first glimpse of the existence and nature of such a mechanism, and Mr. Morley Roberts has realized to the full the great import of Starling's suggestion. He regards the cell units of the body as living in a state of armed neutrality, ready to break into riot if control be in any way weakened or withdrawn. Malignity of all kinds, he argues, must depend on a weakening of mutual or hormonic control; the dermal epithelium of the fingers becomes invasive when the hands have been scorched by *x* rays, but this invasiveness, the author holds, is not because the epithelium has become infected by a rabies-like madness, but because the underlying connective tissue has been damaged, and can no longer control its epithelial neighbour.

Perhaps the most suggestive pages of this book are those in which the author seeks to give an explanation of the nucleus of a cell and of the elaborate nuclear changes which herald the division of a cell. In studying human communities he had noted that every great evolutionary change depended on the invention of new or of improved tools and weapons. This has held true for every human advance from the palaeolithic period to the present. To account for the nucleus and its behaviour he regards the cytoplasm as the essential element of the living cell, while the nucleus represents a tool-shop containing the catalysts or hormones which regulate the growth and work of the cell; the phenomena of mitosis as seen through the microscope are the same manifestations as a celestial observer might have seen on the banks of the Jordan when Abram and Lot separated their herds and flocks and moved apart.

Among the more brilliant suggestions put forward by Mr. Morley Roberts must be counted his extension of Wolff's law—making it apply not only to bone but to all tissues which are subjected to mechanical stresses, including muscle. Wolff's law stipulates that osteoblasts respond in their operations to meet the stresses to which they are subjected. The author extends the law to muscular tissues of all kinds—voluntary, cardiac, and unstriated. Muscle fibres group themselves so as most effectively to sustain the stresses which fall upon them while contracting. He rejects with impatience the idea that adaptations acquired under this law are barred from transmission by heredity.

We have only cited one or two of the daring interpretations with which the penetrating imagination of the author has studded his pages. *Warfare in the Human Body* is not an easy book to read in spite of a clear style and a wealth of simile and epigram. But emphatically it deserves study by everyone who seeks to come to grips with the nature of living matter; medicine can never be a science until we reach the point which permits us to postulate a theory of life. We cannot hope to conquer disease until we have reached this point. Mr. Roberts has suggested some most likely lines of progress, as when he puts forward the idea that nutrition and immunity are the same problem. There is no need in his case to make any allowance on the score of his being an amateur; he can meet the specialist in the various departments of medicine and of biology on an equal footing. He has written a book which will count in solution of the many problems at which medical men are now working.

DISEASES OF THE URINARY SYSTEM.

A FOURTH edition of *Diseases of the Genito-urinary Organs and the Kidney*,[5] by Professors ROBERT H. GREENE and HARLOW BROOKS, has appeared. The work is the result of collaboration between a physician and a surgeon, and deals with both the medical and the surgical aspect of urinary disease. Although diseases of the genitalia are included within the scope of the book, it is chiefly with lesions of the kidneys, ureters, and bladder that the writers are concerned. Since considerable advances have been made in methods of examination of cases of urinary disorder during the last few years, the work has had to be brought up to date in this direction. The authors recommend, amongst other procedures to be employed in diagnosing the presence of pus in a kidney, that of examining the urine before and after massage of the kidney and the ureter. If as the result of this massage a considerable amount of pus appears in the urine nephrectomy is, they consider, as a rule indicated.

In the authors' experience surgical methods of treatment have been productive of little good in nephritis. Decapsulation is described, but is dismissed as a disappointing measure. No attempt, however, has been made to arrive at a conclusion as to what type of nephritis is likely to be benefited by such a procedure, and what type not. In a work that is the outcome of collaboration between a physician and a surgeon we should have wished to have seen such problems more fully discussed; lying as they do on the borderline between surgery and medicine, they are too often attacked single-handed. Advances will be more likely when physician and surgeon combine their forces, as in the work under review.

In the section on stone in the bladder the authors refer very favourably to an evacuating lithotrite invented by Dr. Chismore of San Francisco. The male blade of this instrument is channelled, and acts as an evacuator as well as a lithotrite. A second adjustment in the form of a hammer can also be attached to it. Altogether the instrument would appear to combine many advantages within a comparatively small bulk. The authors, however, do not appear to have proved its worth by personal experience. Their description of the technique of litholapaxy with this instrument is taken from the writings of the inventor, the authors themselves showing a preference for the operation of suprapubic cystotomy.

The subject of gonorrhoea is dealt with, but not in great detail. In view of the number of works that have been

[5] *Diseases of the Genito-urinary Organs and the Kidney.* By Robert Holmes Greene, A.M., M.D., and Harlow Brooks, M.D. Fourth edition. Philadelphia and London: W. B. Saunders Co. (Roy. 8vo, pp. 666; 301 figures. 24s. net.)

written on this special theme this restriction is wise. Syphilis is only referred to in so far as it affects the urinary or genital organs. Minor lesions of the genitalia, such as varicocele and hydrocele, are also dealt with, but occupy much less space than is given to lesions of the urinary apparatus. There is no bibliography, and references to literature are few. In their original preface the writers admitted that they had made no attempt at completeness, their aim being to discuss the more important lesions of the genito-urinary tract from the standpoint of the general practitioner and of the surgeon. They have kept the same object in view in this, the fourth, edition of their work.

NOTES ON BOOKS.

THE use of the title *Athena* for the Year Book of the Learned World among the English-speaking Races,[6] which Mr. C. A. EALAND has prepared, is a direct challenge to the German year book of the universities, of which twenty-three issues had appeared before the war. As Minerva was the Latin so Pallas Athene was the Greek goddess of wisdom. *Athena* is limited to the English-speaking nations, so that its scope is much smaller than that of the original German year book, and smaller also than the French publication *Index Generalis*, of which the first number appeared last year and which also is a year book of the universities of the world. The new issue of *Minerva* (for 1920) is, however, on a much smaller scale than those that appeared before the war, and the information given about the universities of the allied nations is very meagre. *Athena* therefore appears most opportunely. As a typographical production it is far in advance of *Minerva*; those who have plodded time after time through a page of the German work in search of a name will appreciate the well-spaced, clear-set pages of *Athena*. A further improvement might be effected by arranging the names of professors in any one university alphabetically. A redundancy which becomes a rather aggravating defect is the repetition of the full title of the book at the top of every page; it is confusing, and the name of the university town would make the page much clearer and search much easier. As might be expected in the first issue of a work of this character, it is not difficult to pick out some errors, but the publishers disarm criticism by appealing for corrections, and the volume promises so well that it will be worth while to send them. If the venture prove successful it is proposed to increase its scope in future editions by including the learned institutions of our allies. It may be well to go further and include those of our late enemies also. It is certain that it will not be many years before both Germany and Austria regain to a very large extent the place they held in the world of science and of letters—in the learned world, in fact—and a work of this kind, to be complete, must include the learned institutions of those countries. One wonders why such a work in English has not been brought out before, and the publishers are to be congratulated on their courage and enterprise. Their task must indeed have been a heavy one; the result of their labour, however, is very good. One could wish that the book will find a place in all libraries and learned institutions wherever the English language is spoken.

By persuading Lady BRADFORD to publish *A Hospital Letter-writer in France*,[7] Sir Archibald Geikie has enabled the many—who will if wise seize this opportunity—to share the pleasure and wholesome emotions called forth by these simple sketches of kindly work done between December 11th, 1914, and April 7th, 1919, by one who may well be called the Lady with the Pen. The blending of pathos and humour is so skilful and so devoid of effort or art that the effect is delightful—a rather unexpected product of such a war experience. The patients accepted Lady Bradford as their private property, though sometimes with disappointment that their letters were not to be written by a Countess—the wife of the Earl of Bradford. They were truly loyal, as is shown by the following circumstance: On one occasion her offer to act as scribe was met by the reply, "No, thank you; there's an old motherly body that writes; I want her." To this there were two rejoinders: "That sounds very like me," and, from a voice down the ward, "That's her I told you of a-talking to you." The letters of the patients' relations naturally provided some interesting references. One mother wrote to the matron of the hospital: "Will you kindly tell me who May Bradford is? my son is very susceptible." Another mother congratulated her boy on having his letters written by a nice old (three times underlined) lady; and a sweetheart, perhaps naturally, began her letter with the question, "Who is this pretty V.A.D. who wrote for you? Tell me all about her."

This year the twenty-first edition of *Gray's Anatomy*[8] has been published. This medical classic is again edited by Professor ROBERT HOWDEN, of the University of Durham, who acknowledges his indebtedness to Professor J. Acworth Menzies, who has revised the histological section, and also to Dr. J. Dunlop Lickley, Professor J. C. B. Grant, and Professor E. P. Stibbe. Dr. A. J. Jex-Blake and Mr. John Clay have edited the section on applied anatomy. In the present edition there are more than eighty new illustrations, and the whole of the text has been carefully revised. In spite of the fact, however, that in 1918 the Anatomical Society of Great Britain and Ireland concluded that there was "no reason for departing from the use of the old nomenclature," the editor in his new edition maintains his use of the new or "Basle" terminology, with the old name bracketed after the new where there is a difference. The American Association of Anatomists, it is true, considers it inadvisable to abandon the Basle nomenclature, but we are rather surprised that the editor of *Gray's Anatomy* should still prefer to agree with them rather than with the British Society, for he admits in his preface that the new nomenclature is, in its entirety, not satisfactory. When we find that at present some British and Colonial anatomists teach the old and some the new terminology, it is obvious that a definite and unanimous policy is called for, and when the policy is agreed upon it can be carried into everyday use by no one better than by the editors of the standard anatomy text-books. As regards the present edition, it is as excellently produced as ever, and the editor is to be commended on the success with which he has kept the volume within reasonable dimensions.

Sir WILLIAM HALE-WHITE has issued a new edition, the seventeenth, of his well known *Materia Medica*.[9] The whole book has again been revised, and the various war regulations affecting prescribing have now been omitted. As to the merits of this manual, the seventeen editions of "Hale-White" since 1892 speak for themselves.

The National Council of Social Service has issued a revised and enlarged edition of its *Handbook on Public Services*[10] for the use of those engaged in social and personal service work. Originally published in 1917, it has evidently proved of practical value, for 14,000 copies have been issued. In the preparation of this edition the various Government departments concerned have assisted. The new edition forms a useful work of reference.

[6] *Athena: A Year Book of the Learned World.* Edited by C. A. Ealand, M.A. London: A. and C. Black, Ltd. 1920. (Cr. 8vo, pp. viii + 392. 15s.)

[7] *A Hospital Letter-writer in France.* By May Bradford, O.B.E. London: Methuen and Co. 1920. (Cr. 8vo, pp. 116; one photograph. 5s. net.)

[8] *Anatomy: Descriptive and Applied.* By Henry Gray, F.R.S., F.R.C.S. Twenty-first edition, edited by Robert Howden, M.A., D.Sc., M.B. London: Longmans, Green, and Co. 1920. (Roy. 8vo, pp. xiv + 1366; 1248 figures. 42s. net.)

[9] *Materia Medica, Pharmacy, Pharmacology, and Therapeutics.* Seventeenth edition. By William Hale-White, K.B.E., M.D. London: J. and A. Churchill. (Fcap. 8vo, pp. viii + 712. 10s. 6d. net.)

[10] London: P. S. King and Son, Ltd. Price 2s. net.

THE ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

THE LORD MAYOR presided at a meeting at the Mansion House on October 15th on behalf of an appeal for £200,000 by the Royal National Orthopaedic Hospital. The object of the fund is to extend the present building on an adjoining site already acquired in order to provide (*a*) adequate space for dealing with out-patients and applying new methods of treatment, (*b*) accommodation for paying patients, (*c*) a school of orthopaedics for students and post-graduates, (*d*) extension of the workshops for making surgical appliances and surgical boots, and (*e*) additional accommodation for the medical and nursing staffs. The scheme also includes the formation of a country branch with 200 or 300 beds for children. H.R.H. PRINCE HENRY, the new president of the hospital, said it gave him great pleasure to know that almost the first occasion he was attending a public meeting should be

on behalf of a charitable institution of such supreme importance as the Royal National Orthopaedic Hospital. Since the end of September, 1914, when the first batch of wounded soldiers was admitted to the hospital, upwards of 18,000 serving and discharged disabled soldiers had been treated within its walls, and the out-patient department in eleven years had increased from 11,000 to 66,000. He had paid a visit to the hospital on the previous day, and it was evident that the demand upon its resources were now such that the increased work could not be adequately carried on in the existing building; 75 per cent. of the patients were children, and it must be remembered that treatment in the early stages meant probably certain cure. Lord DENBIGH, chairman of the hospital, gave particulars of the good work being done there, and urged the necessity of donations being forthcoming. The plans of the additional buildings had been approved by the King Edward VII Hospital Fund, which had promised a donation of £24,000 provided the scheme was carried to a successful issue. Sir ROBERT JONES urged the necessity of early treatment of cases. He said that a great deal of the knowledge the surgeons were able to utilize in dealing with disabled soldiers during the recent war was derived by them from treating the little crippled children. A vote of thanks to Prince Henry, proposed by Sir ROBERT JONES, was carried unanimously, and Colonel OPENSHAW moved a vote of thanks to the Lord Mayor and Lady Mayoress for their assistance in connexion with the meeting.

PREVENTIVE MEDICINE AND THE MINISTRY OF HEALTH.

Sir George Newman's Hunterian Lecture.

The Hunterian Lecture was delivered on October 13th at the first meeting of the Hunterian Society's second century. The lecturer was Sir George Newman, K.C.B., who spoke of the Ministry of Health as an instrument of preventive medicine. After pointing out that preventive medicine had a double purpose, aiming on the one hand to fortify and develop the defensive powers of the individual, and on the other to remove the causes of disease and of its propagation, Sir George Newman went on to describe the medical structure of the Ministry of Health. He first detailed its functions as laid down by Parliament, and then went on to speak of its six original divisions, each of these departments having a medical man or medical woman in charge. The services with which they had to deal were: (1) General health and epidemiology, this department being equipped with a laboratory for research; (2) maternity and child welfare, staffed by medical women, nurses, and midwives; (3) tuberculosis and venereal disease; (4) control of food supply; (5) general medical practice (general practitioner and insurance services); (6) sanitary administration. In addition to these there were three other departments which had come into the Ministry by another route: (1) The school medical service, contracted out, it was true, to the Board of Education, but with a medical staff which formed part of the general medical staff working under the authority of the Minister of Health; (2) the Registrar-General's department; (3) the Board of Control for lunacy, transferred from the Home Office. Further, the Minister had a Consultative Committee, of which Lord Dawson was the present chairman; such a committee embodied a sound principle. He pointed out that the Ministry had the services of clinicians, that it had allocated medical referees to different parts of the country, and that it had made arrangements for closer co-operation with the other Government offices which had medical departments. The Ministry employed a system of notification, general and special, of disease occurring in any area, and the results of such notifications were all properly studied and charted. It had also a system whereby telegrams from British consuls in various parts of the world were received regularly, conveying information with regard to the incidence of infective disease in their respective countries. The Registrar-General's office was available for the Ministry; the staff of the Ministry travelled all over the country and brought back to Whitehall accounts of what was happening, and the Ministry received reports from local authorities. In England and Wales there were 1,800 sanitary authorities, 318 education authorities, 650 Poor Law authorities, 245 pensions committees, and 142 insurance committees; it was hoped in time to have a simplification of the unit of sanitary government, but this was not so easy to effect as it might appear. It was through these local bodies that the Ministry did much of its work.

The Ministry of Health, Sir George Newman continued, had been subjected naturally and properly to criticisms, but he would remind its critics that in the first place it was not constituted to solve the problems of local self-government. Nor was it a department which could yield immediate results. It was criticized for not doing at once certain things which could not by any conceivable means be done immediately, but with regard to which it was making plans which in ten or twenty years' time would yield their fruit. Again, unlike certain other departments, it could not itself "deliver the goods," as it worked through local authorities. He then proceeded to give a few specific illustrations of the manner in which the machinery worked. One task of the Ministry was to make thoroughly effective a sanitary cordon around Great Britain and Ireland. At the thirteen ports at which people could land or food be imported from abroad there was now being put into operation a system of control. The Ministry was also assisting in the creation of an international health office attached to the League of Nations and the Council of the League had accepted the scheme. With this organization it would be possible to take international action against the exotic diseases and other important measures. As other illustration, he referred to the great work which lay before the Ministry in connexion with problems of maternity and child welfare. Of the 700,000 women who gave birth to children during a year, 3,000 died, and among the others there was an immeasurable amount of invalidity. The number of stillbirths was 20,000, and 60,000 infants even now died in the first year. The solution was in the supervision of antenatal conditions and of pregnancy, reform of midwifery, and provision of maternity homes. Another illustration was afforded by mental diseases. There were now in the asylums of England and Wales 116,000 insane persons, and there were also, according to the Royal Commission, 150,000 feeble-minded, of whom 35,000 were children. Beyond these numbers there was a zone of incipient mental aberration. It had been stated that 10 per cent. of school children were "dull and backward," and he believed that to be an under-estimate. It should be part of the service of the State to maintain the mental as well as the bodily health of the people. A start should be made, not with the certified lunatic, but with the conditions which created him.

Sir George Newman spoke also at some length on the tuberculosis service and the methods of improving the sanatorium, which he thought had not had a fair trial. Among other conclusions, he suggested that in tuberculosis, as in venereal disease, the decisive factor must be regarded as social and perhaps economic, rather than medical or surgical. His final illustration had reference to the general practitioner. The insurance system had been criticized, he said, and yet there were points in its favour which it was well to recall. He believed that this was the only country in which the control which had been introduced was national as distinct from a local or sectional system of insurance; medical men engaged in the work were represented on the administration; insurance doctors belonged to the general body of practitioners; there was freedom of choice of doctor by patient; the system of payment per patient had the enormous advantage to preventive medicine that it brought the patient to the doctor oftener and earlier. In the old days contract patients came at the rate of one and a half attendances per patient per annum; the attendances now of the insured patient averaged four per annum. He believed the thirty regional or "outdoor" medical referees on the staff of the Ministry would be extremely valuable. Lastly, it was hoped at an early date to improve equipment and facilities. He concluded with the emphatic expression of his own view that there should be no attempt to make the general practitioner a whole-time civil servant, for that would be bad for the patient and the doctor, and would be likely to defeat the advance of the science and art of medicine. The thing to do was to load up the individual responsibility of the private practitioner and not to diminish it; to assist him to help himself, to provide for him the necessary facilities for efficient practice, and to secure for him his full measure of preventive work in Medicine.

British Medical Journal.

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THE BIRTH AND GROWTH OF SCIENCE IN MEDICINE.

THE Harveian Oration, though by no means the oldest, may fairly be regarded as the blue ribbon among the lectureships of the Royal College of Physicians of London, on the ground that it is allotted to a Fellow who combines considerable seniority with real eminence in the profession. It is probably also the most difficult to discharge with satisfaction, for since its inauguration in 1656 more than 200 orators have been called on to obey Harvey's directions that they should commemorate the benefactors of the College, exhort the Fellows to follow this example, to search and study out the secrets of nature by experiment, and to continue in mutual love and affection among themselves. In the past the commemoration of benefactors largely centred on Harvey and his great discovery, and this dutiful action has naturally made it increasingly difficult to find any new aspect of the subject worthy of the occasion. As a further development of the theme the genesis of Harvey's idea and its historical connexions with the labours of his great predecessors, who laid the foundations of anatomy and physiology, have been explored; thus the late Dr. J. F. Payne in 1896, and Dr. Raymond Crawfurd in his Harveian Oration of last year, specially considered Harvey's relations to Galen and Aristotle, while the late Sir William Osler in 1906, shortly after he became Regius Professor of Medicine at Oxford, sketched Harvey's relations to his contemporaries and more immediate predecessors in his oration on "The growth of truth, as illustrated in the discovery of the circulation of the blood."

Sir Frederick Andrewes, adopting and extending the lines indicated by these three fellow-Oxonians, has utilized the opportunity afforded him as this year's Harveian Orator to describe the birth and growth of science in medicine (see p. 615), and has attractively traced the influences governing the progress of knowledge of disease, with special reference to the early stages rather than to the final results. As a whole-time pathologist his selection is most welcome, for it emphasizes the close—indeed, inseparable—relations of medicine and pathology, and, moreover, maintains the wide scientific outlook of the College, which, as long ago as the seventies, chose two professors of physiology to give this oration. Science is defined as the endeavour to formulate the laws of nature, and as the pursuit of knowledge for its own sake, and it is pointed out that medical science began in the sixth century B.C. among the Greeks, for there is no evidence of any true step in this direction in Egypt at this time. Interpreting Harvey's first injunction in a broad sense, Sir Frederick Andrewes commemorates Thales of Miletus as the first spiritual benefactor of the College, on account of the atmosphere of intellectual liberty and rejection of myth and tradition which he and his followers established, and thus rendered science possible. Medicine, though associated with religion, now entered on its first scientific stage by becoming an observational science some time before the advent of Hippocrates, who is described as an admirable case-taker with the lofty and independent spirit of a great physician and a great gentleman. The chief contribution made to medicine by Athens during its golden age of the fifth and fourth centuries B.C. was the firm establishment of the abstract sciences, and especially of logic and mathematics, as a sure foundation for the future development of the concrete sciences. The permanent influence exerted by the spirit of Hellenism can hardly be exaggerated; it bore fruit in the medical school at Alexandria, where dissection first came into vogue, and later was active in Rome, so that the orator rightly commemorates Galen as the last and in many ways the greatest of the Greek physicians, as he had the advantage of 600 years' experience over Hippocrates, who, however, was probably the bigger man. As the first to employ the experimental method systematically in medicine Galen should be regarded as the father of physiology, and it is indeed surprising that he came so near to anticipating Harvey in his discovery of the circulation without actually succeeding in accomplishing this monumental achievement.

With the awakening in the Renaissance from the long intellectual slumber of the dark ages Galen's works became more accessible and his influence was more widely felt. Under the stimulus of Vesalius anatomy was the first science to show signs of independent thought and research; and so, with the inspiration of experiment in the air, the time for Harvey's epoch-making discovery was ripe. After thus tracing the growth of the scientific method up to Harvey and giving an appreciative comparison of the *De Motu Cordis* and of the *De Generatione*, Sir Frederick Andrewes touches on the factors influencing the advance of medical science since Harvey's time, and in a passing reference to clinical investigation and study hazards the humorous speculation whether with his apparent contempt for physiology and pathology Sydenham would entirely acquiesce in now being regarded as the founder of epidemiology. The four extrinsic events most important in the comparatively recent progress of medicine—namely, the invention of the compound microscope, the development of chemistry, the acceptance of the doctrine of evolution, and the discovery of the relation of micro-organisms to disease—are then rapidly passed in review. As the human body is made up almost entirely of colloids, the necessity for a better knowledge of colloidal chemistry in order to understand the problems of life and pathology is obvious, and might well inspire a future Harveian orator, when dealing with *De Generatione*, to a review of the same outstanding merit as that given by Sir Frederick Andrewes in 1920.

CONGENITAL PYLORIC HYPERTROPHY.

DR. JOHN THOMSON of Edinburgh contributed to the Osler memorial volumes an essay bringing up to date his clinical and pathological observations on congenital hypertrophy of the pylorus, a subject on which he can speak with particular authority. It is a strange disorder, and the term "congenital" applied to it, though correct, is a little misleading. The muscular hypertrophy begins before birth, but, as a rule, the characteristic symptoms do not appear until the second or third week and may be delayed until the sixth or eighth. The structural change consists of true hypertrophy of the entire muscular coat of the pylorus and adjacent stomach wall, accompanied by some lesser amount of the same in the cardiac end of the stomach and in the oesophagus. Other local changes, such as dilatation of the stomach and oesophagus and gastric catarrh, are secondary to

that at the pylorus. The abnormality of function consists mainly in an ill-timed abnormally forcible and prolonged contraction of the pyloric muscle which prevents the food passing into the bowel, and so determines vomiting and eventually starvation and wasting.

Two theories have been put forward to account for the hypertrophy of the pyloric muscle: the one would account for the increase by supposing it to be a simple congenital redundancy of growth. The other, which is favoured by Dr. Thomson, is that the primary defect is in function. "It is known," he says, "that the normal fetus swallows a considerable quantity of amniotic fluid during intrauterine life; and as this implies a certain amount of co-ordinated muscular action of the stomach and pylorus, it is believed that the supposed inco-ordination between these parts begins when the fluid first passes through them. There is reason to believe, however, that the muscular action may not at this period be very vigorous or continuous, and that therefore, by the time the child is born, only a small degree of hypertrophy will have occurred. After birth, when regular feeding has begun, the force of muscular action and the inco-ordination will tend to increase so that the hypertrophy will progress much more rapidly than during intrauterine life. It is in accordance with medical, surgical, and pathological experience that the pyloric tumour does grow larger and harder while the active symptoms continue."

Dr. Thomson holds that in the blocking of the pylorus two factors are at work: first the abnormal muscular contraction, and secondly the mechanical effect produced by the increased bulk of the muscular tissue; the peritoneum, which only yields slowly, prevents it from expanding outwards, and so as it enlarges it must press inwards and diminish the lumen. The stage at which the symptoms become typical probably depends mainly on the time when the muscular layer has become so thick that, even during relaxation, it seriously embarrasses the functional opening of the canal for the passage of food. In this way the varying date after birth at which symptoms begin can be accounted for. In an ordinary case the typical copious "shooting" vomiting sets in quite suddenly without apparent cause, although on inquiry it may be ascertained that previously the infant has sometimes returned milk without distress. Once the violent vomiting begins it continues at short intervals, and unless treatment is soon instituted and proves successful the condition of the child quickly becomes serious; the immediate treatment is to stop all food for at least twenty-four hours, and to give subcutaneous injections of normal saline solution every four to six hours. They may be supplemented, or, if they cause pain, replaced, by enemata of normal saline solution (one to two ounces every six hours). The important physical signs of the condition are a local tumour and visible peristalsis. If the child is seen early enough simple treatment may suffice; this consists in restricting the size of the feeds given every two or three hours to two ounces or less, and diminishing the proportion of curd and fat. At the same time the stomach should be washed out with warm water once or twice a day.

If, in spite of these measures, the child rapidly loses strength, or if after two or three weeks it fails to improve, a surgical operation should be undertaken; Dr. Thomson prefers Rammstedt's, which consists of simple division of the pyloric muscle without stitching. Of five cases in which this operation was done recovery ensued in four—a much larger proportion than after Loreta's operation for divulsion of the pylorus. All the cases at first reported belonged to the very acute type; further experience founded on the marked symptoms in them has led to the recognition of the milder cases; the acute type is now known to be rare. In these acute cases it may be necessary to resort to surgical operation before the peristalsis comes on. There are also very mild cases, which usually recover after careful dieting; yet the hypertrophy may be very considerable, and the mildness of the clinical manifestations must be attributed to the fact that in these cases the pyloric muscle, though greatly hypertrophied, is less frequently than in ordinary cases in a state of abnormal contraction, so that it allows a fair amount of food to pass into the bowel. In all probability many of these mild cases are not recognized, but are regarded as particularly troublesome examples of indigestion.

The condition with which congenital hypertrophy may most easily be confused is the obscure nervous complaint usually termed "pyloric spasm." In such cases vomiting begins soon after birth and eventually becomes projectile, the stomach being completely emptied; vigorous peristalsis is absent and small doses of opium usually give relief. In the less severe cases of congenital hypertrophy of the pylorus the object is to carry the child on until spontaneous recovery results by the natural opening up of the lumen of the pylorus. Such children, however, must be watched carefully, and the weight registered daily. It may be long before any increase in weight is noted, but when once it begins—that is to say, when once the pyloric lumen has begun to widen—the weight rapidly rises. What may be expected from medical treatment is not so much hastening of the opening of the passage as relief just sufficient to keep the child alive, in spite of the continuance of the obstruction, until the natural process of recovery has time to develop. When recovery does take place, whether with or without surgical intervention, the prospect of the patient seems to be very good. Early in 1919 Dr. Thomson got information with regard to 33 of the 42 children who had recovered from the condition; their ages varied from 10 months to 16¾ years. The majority, doubtless, as he says, owing to the extra care their mothers had taken of them, were above the average in development and vigour, and none showed any signs of serious gastric derangement. He concludes that the danger to life, and even to health, in this disease is only temporary; children who survive it in infancy are in no way handicapped thereby in after-life. Those operated on were apparently as well as the others who were treated medically.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

On October 19th a number of ladies interested in the progress of medical education of women entertained a distinguished party at lunch in Fishmongers' Hall in order to make better known the scheme of the London School of Medicine for Women for the extension of its hospital, the Royal Free Hospital, to afford greater facilities for clinical instruction. Sir Alan Garrett Anderson was in the chair. H.R.H. Princess Louise, Duchess of Argyll, was present, and among the guests were the Duchess of Sutherland, Lady Curzon of Kedleston, Viscountess Northcliffe, Sir Anthony Bowlby, President of the Royal College of Surgeons, Sir J. J. Thomson, President of the Royal Society, Sir John Bland-Sutton, President of the Royal Society of Medicine, Sir Francis Champneys, Chairman of the Central Midwives Board, and Sir George Newman, Secretary to the Ministries of Health and Education. Among the many distinguished medical women present

were Miss Aldrich-Blake, Dean of the Medical School, and Dr. May Thorne, honorary secretary of the Appeal Fund Committee. After the toast of "The King," Dame Clara Butt sang the National Anthem. Sir Alan Garrett Anderson, treasurer of the scheme, said that the object of the assembly was to bring to notice what the London School of Medicine had already accomplished for the medical education of women and what it hopes to achieve in the future. It was founded in 1874, and was the first medical school for women. His mother, the late Dr. Elizabeth Garrett Anderson, who was the first English woman to obtain a medical degree, had encountered great difficulties in obtaining instruction. The progress of the school had recently been very rapid. In 1913 it had 179 students; this year (1920), the number was over 500. The cost of medical education had increased in various directions, and the need for good clinical training was never greater than at the present time. It was proposed to raise fees, but it was not possible to cover all expenses from that source. With more students extended facilities for clinical training were needed, and an appeal was therefore made for money to extend the Royal Free Hospital—which is the hospital of the school—to equip the extension, and to meet maintenance charges for free or partially free beds; certain extensions of the school are desired also. The hospital has recently been presented with ground immediately adjoining the present building, and it is proposed to erect upon it a block containing one hundred beds, including small wards for patients with limited incomes who can contribute a few guineas a week towards their maintenance. It was desired to provide accommodation for women patients who are not willing to accept the charity of a hospital but yet cannot properly be treated in small flats or bed-sitting rooms. The extension will entail provision for an increased nursing staff, and the hospital is also in need of more laboratory accommodation, for it was the ambition of the institution to provide the highest medical skill and the best nursing for those who come under its care, including those classes who were unable to provide from their own resources the necessarily high cost of efficient treatment. The toast of the School, with which the chairman concluded, was acknowledged by Dr. Mary Scharlieb, the president, who said that the success of the school was shown not only by the increasing numbers of students, but also by the fact that they were drawn from many countries, including India; there were six Indian women studying at the school at the present time. It might, she said, be asked why there was need to increase the accommodation for women students when many schools hitherto open to men only were now willing to receive a limited number of women students. The answer was that the hospitals of these schools had hitherto withheld senior posts from their women graduates. It was therefore necessary to have a strong school and hospital for women students only until all medical schools, together with all hospital appointments, were open to men and women on equal terms. We find on reference to the annual report for 1920 that the possibility of establishing a clinical unit has been under the consideration of the council of the school, and that there is a hope that a gynaecological element may shortly be formed; an endowment fund for some other chairs for a limited number of years is also in view. Altogether it is hoped to raise £50,000 to meet the needs of the school, including a bursary fund for the assistance of suitable students.

VOLUNTARY AND MUNICIPAL HOSPITALS.

Sir Napier Burnett gave an address to the West Midland region of the British Hospitals Association in Birmingham last month. It is now printed as a pamphlet, and proves to be a detailed consideration of the sources from which the income of the voluntary hospitals could be increased and placed upon a more stable and permanent footing. Among the means discussed were the systematic institution of schemes for regular subscriptions from the artisan class through weekly workshop subscriptions or Hospital Saturday and Sunday Funds. Next it is urged that more could be done to induce employers to recognize their obligations to the hospitals in respect of the help given to sick and injured workmen. Perhaps the most novel point made is with regard to the value of the hospitals to insurance companies. The low tariff rates quoted now for life and accident policies are based on work done by the profession in and out of hospitals; yet the insurance companies do little or nothing for the hospitals. The secretary of one hospital lately made an appeal to fifty-three accident insurance companies, stating that in 1919, which was an average year, 224 persons entitled to statutory compensation for accidents were treated as in-patients at a cost to the hospital of £1,350, and 4,514 as out-patients at a cost of £1,500. The result of the appeal was a subscription of £20 from one company. Another point Sir Napier Burnett made was that the voluntary hospitals receive persons injured accidentally in the streets, as also criminal cases, but receive no compensation from the municipality which is responsible. To provide the additional beds which it is admitted are needed, Sir Napier Burnett, like many others, looks to the utilization of those Poor Law infirmaries which are disused or could be cleared if arrangements were made between several neighbouring authorities. He made reference to the Bradford experiment recently described in our columns by Dr. Buttar, and expressed the opinion that the two hospitals, the voluntary civil hospital or infirmary and the municipal or rate-supported hospital, could not continue to exist side by side, because the voluntary hospital must lose subscriptions and legacies. He objected to the municipalization of general hospitals on the ground that the management would be less efficient and economical. His inquiries had led him to conclude that at a moderate estimate the cost would be at least one-third greater. One reason for this was that the municipal committee would not necessarily consist of members of the council who took a real interest in hospitals; they might be quite inexperienced, or have expensive fads of their own. Another reason was that an inquiry made last year led to the conclusion that the voluntary hospitals could buy better than municipal and Poor Law infirmaries. As an instance, he mentioned that of two hospitals in the same town, the voluntary hospital bought rice at 30s. while the municipal hospital paid 84s. Finally, it was to be remembered that the present medical staffs gave their services free to the voluntary hospitals, but would not be willing to serve the municipality on the same terms. The general conclusion would seem to be that though the voluntary system cannot provide new buildings, it can, if properly conducted, meet current expenses. Sir Napier Burnett goes so far as to suggest that Poor Law hospital buildings should be handed over to voluntary committees to administer as voluntary hospitals. He regards this as a practical suggestion, falling within the bounds of the subsidy the State should make to voluntary hospitals.

INFLUENCE OF DILUTION ON THE TOXICITY OF ALCOHOL.

Dr. H. M. Vernon, in 1919, in a study[1] undertaken at the instance of the Central Control Board (Liquor Traffic), investigated the action of 5, 10, 20, and 40 per cent. solutions of alcohol taken in the form of pure alcohol or brandy. The quantities of alcohol consumed were not greater than 30 c.cm., and dilutions of less than 5 per cent. were not employed. The ensuing impairment of neuromuscular co-ordination was measured by a typewriting test, or by the use of an adding machine, or by target pricking. Using the typewriting test, Dr. Vernon has conducted on himself a further series of experiments.[2] Three

[1] British Medical Journal, August 16th, 1919, p. 209.
[2] *British Journal of Inebriety*, October, 1920, p. 39.

and a half hours after food 15 to 90 c.cm. of alcohol were taken; in the case of the larger doses the toxic effect was found to increase at a more and more rapid rate, the greater the quantity of alcohol taken; when drunk as 20 per cent. whisky, 18.3 c.cm. of alcohol was followed by an increase of 0.8 in the "corrected" number of mistakes, 30 c.cm. of alcohol by one of 3.4, 45 c.cm. by one of 8.0, and 60 c.cm. by one of 17.0. The findings of the former investigation are thus fortified. One of the inferences to be drawn from the more recent investigation is important, and—as a fact established by scientific experiment—new. The toxic effect of alcohol taken in considerable dilution was found to be much slighter than was anticipated, and Dr. Vernon concludes that, "practically speaking, beer containing 3 per cent. by volume of alcohol, or 5.25 per cent. of proof spirit, is a non-intoxicating liquid." When taken in the form of 3 per cent. beer, 90 c.cm. of alcohol produced only as much effect as 54 c.cm. in the form of 4 per cent. beer, as 46 c.cm. in the form of 5 per cent. beer, and as 42 c.cm. in the form of 20 per cent. whisky. The 90 c.cm. of alcohol mentioned is contained in 5¼ pints of 3 per cent. beer, and Dr. Vernon calculates that in his own case more than 10 pints of beer, which would take him over four hours to drink, would be needed in order to intoxicate. It may be argued that experiments conducted on one person only are open to fallacy; the subject of these experiments, however, justifies his generalization that 3 per cent. beer is non-intoxicating by comparative observations which show him to be more susceptible to alcohol than the average man. One set of experiments conducted on another person somewhat less susceptible to alcohol than Dr. Vernon is described; in this subject 65 c.cm. of alcohol in 4 per cent. strength had the same effect as that produced by about 49 c.cm. of alcohol in 10 per cent. strength. Dr. Vernon draws the following practical conclusions from his experiments. "In order to bring about an increase of sobriety in the nation, it is clear that so far as possible the consumption of the stronger beers and of spirits ought to be discouraged, and that of the weaker beers and of cider to be stimulated. This object could to some extent be achieved by exaggerating the system of taxation which is already in force. If the taxation of light beer containing 3 per cent. or less of alcohol were so reduced that it was possible to sell it at twopence per pint, whilst that of the heavier beers was increased so that beer of 4 per cent. alcoholic strength cost fivepence per pint, and beer of 5 per cent. alcoholic strength one shilling per pint, a very powerful stimulus to the sale of the light beer would be provided. For each penny spent a man would get 8.5 c.cm. of alcohol in the form of 3 per cent. beer, 4.5 c.cm. in the form of 4 per cent. beer, and only 2.4 c.cm. in the form of 5 per cent. beer. Hence from motives of economy, he would generally choose the 3 per cent. beer. He might grumble that it was not strong enough to tickle his palate, and occasionally indulge in the heavier beers, but he would seldom be able to afford enough of these beers to bring him anywhere near to intoxication." The two beers with which Dr. Vernon experimented contained, before dilution, 5.43 per cent. and 3.46 per cent. of alcohol by volume. Dr. Vernon found that light claret containing 10 per cent. of alcohol, taken with the food, had a slight toxic action comparable with that of 3 per cent. beer taken on an empty stomach; port or sherry imbibed under similar conditions would, as a rule, be rather more toxic than 5 per cent. beer taken on an empty stomach. Claret had the same effect as whisky diluted to an equal alcoholic strength.

DAIRY RESEARCH.

The Research Institute of Dairying, established at University College, Reading, in 1912, with the help of the Board of Agriculture and the Development Commissioners, has done much valuable work, in spite of insufficient equipment. It is now desired to provide a farm and laboratories; a farm of 350 acres, with a good house, has been found, and an appeal is made for funds to purchase the farm, equip the house as a laboratory, build a dairy, and secure a herd of dairy cattle. This will involve a capital expenditure of £70,000, but to place the Institute on a sound footing an endowment fund of £80,000 is required. University College, Reading, will act as trustee of the property of the Institute, which will be administered by an executive committee, responsible to a board of dairy research, containing representatives of the Ministries of Agriculture and Health, of the Royal Agricultural Society, and of other bodies and persons interested in the production of milk under hygienic conditions. The financial importance of the dairy industry is, perhaps, not generally appreciated; it was calculated in 1914 that the yield of milk in this country at 1s. a gallon was worth 53½ millions sterling a year, or one-twelfth of the total monetary value of all the foodstuffs purchased by the nation. At the present time, owing to faulty methods, producers lose money, and the larger part of the milk distributed to the public is grossly contaminated, and often in other respects not of good quality; the way to remedy this evil of dirty milk is understood, and the chairman of the appeal committee, Viscount Elveden, is himself one of the pioneers of a pure milk supply. But a research institute is needed, for there are many other problems to be solved. An institute possessing a herd, a research dairy, and laboratories would be able to study the methods which lead to success or failure in the management of dairy herds, the production and distribution of milk, and the preparation of dairy products.

A MEDICAL SOCIETY IN MESOPOTAMIA.

At a meeting held at the Military Governor's office, Baghdad, on August 14th, Major T. Barrett Heggs, the medical officer of health, presiding, it was unanimously decided by thirty-four Baghdad medical men, of whom ten were British, to form a Baghdad medical society. Lieut.-Colonel W. B. Lane, the director of health services, was elected first president. The Executive Committee comprises the officers of the society, together with the directors of the civil hospital for women, the new general hospital, and the central laboratory. It has been decided to form a medical reference library, and to hold ordinary meetings on the first Wednesday in each month. The first ordinary meetings took place on September 8th, when Dr. Sami Bey opened a discussion on the prevalence and control of syphilis in Baghdad, and on October 6th, when Major B. M. Footner discussed the diagnosis and treatment of syphilis. At a special meeting held on September 22nd, consideration was given to the unqualified practice of medicine and surgery in Baghdad. In succeeding meetings, Lieut.-Colonel A. E. Hamerton will give a demonstration of scientific tests and laboratory aids for the diagnosis and treatment of venereal disease; Captain G. N. Braham will discuss the diagnosis and treatment of gonorrhoea, and Dr. Frederick Johnson will give a paper on the diagnosis and treatment of bilharzia. We congratulate those concerned on the successful establishment of a society which should prove of great service to the medical profession in Baghdad.

THE RED CROSS AND THE LEAGUE OF NATIONS.

Professor F. F. Roget, of Geneva University, in the first of three Chadwick public lectures on "Health, the Red Cross, and the League of Nations," spoke of the League of Nations and the League of Red Cross Societies as joining hands for the care of health among the civil community, in conjunction with the forthcoming Public Health Department of the League of Nations. The Covenant of the League laid down that "The members of the League will endeavour to secure and maintain fair and humane conditions of labour for men, women, and children, both in

their own countries and in all countries . . . and for that purpose will establish and maintain the necessary international organizations"; and further: "will endeavour to take steps in matters of international concern for the prevention and control of disease." The share assigned to the Red Cross Societies of the Allies in bringing about this effect is provided for in Article 25 of the Covenant: "The members of the League agree to encourage and promote the establishment and co-operation of duly authorized voluntary national Red Cross organizations having as purpose the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world." The lecturer explained how the reorganization of the Red Cross Societies for civil work was a direct outcome of the lessons learnt from the war. The terrible effect of war conditions upon the civil community made thoughtful men feel that to the pursuit of general political sanity in the relations of nations to one another (the business of the League of Nations) should be added international care for the bodily health of the human units forming those nations. To that end the Public Health Department of the League of Red Cross Societies, now in Geneva, would supply the centre needed for a world-wide organization. The readiness with which the general public had supplied the Red Cross Societies with money for their war work would have to be renewed for the maintenance of the coming work among the civil community. In this new field a conjunction should take place of voluntary Red Cross effort with the State agencies and institutions in charge of public health. Both, in working together, could hope to remove the ignorance, prejudices, and suspicions which, in remote and backward countries, and often in quarters which should be better informed, stood in the way of the candid and sincere working together of the League of Nations and the Red Cross for the peace and health of all civilized nations.

EXHIBITION OF SPECIMENS AT THE ROYAL COLLEGE OF SURGEONS.

A very remarkable exhibition of specimens was opened in the Museum of the Royal College of Surgeons of England, Lincoln's Inn Fields, on Monday, October 18th, and will remain accessible to medical men and medical students until November 15th. The exhibition includes gifts and additions made to the museum during the past five years. Up to 1914 it had been the custom to place annual additions on exhibition in the council room of the College during the election of new members of Council. During the war the museum and its staff were employed in building up for the Royal Army Medical Service the great collection at present shown in the museum of the College, and hence the annual exhibition of specimens fell into abeyance. The Council, in reviving the annual exhibition, has wisely altered the date from July to October, and instead of giving a temporary exhibition in the council room has placed it in the museum for a period of four weeks at least. It would be impossible to give an account of even the more instructive specimens in the space at our disposal; suffice it to say that nearly all sections of medical and biological research are represented, the illustrations of surgical pathology being particularly valuable.

THE AUTUMN PARLIAMENTARY SESSION.

Our Lobby Correspondent writes: The House of Commons resumed its sittings on October 19th with a burden of business, including measures either in progress of passage or promised, which threatens the continuance of the session up to Christmas, and then some jettisoning of cargo. The Home Rule Bill, the bills dealing with the minimum hours of labour and wages, the Shops Closing Bill, the Agriculture Bill, and the Air Navigation Bill are amongst those of general concern which will take up considerable time. Of more particular interest are several which are in very early stages. There is the Proprietary Medicines Bill, which is at the point of report in the Lords, but has still to come to the Commons; and there is the Ministry of Health (Miscellaneous Provisions) Bill, introduced in the Commons by Dr. Addison just before the adjournment. The latter bill proposes to enable county councils and borough councils, subject to the assent of the Minister of Health, to maintain or contribute to hospitals; it has other clauses touching health and local administration, and its provisions range from clinical thermometers to early mental disorder. There are also the Milk and Dairies Bill, and the Dentists Bill, the last named to be based on the findings of a Select Committee, which reported some time ago. Three bills—the Criminal Law Amendment Bill No. 1, the Criminal Law Amendment Bill No. 2, and the Sexual Offences Bill—are being considered by a Joint Committee of both Houses, with the intention that one of them shall be passed into law this session. The Medical Services Bill has been talked about, but there is little or no prospect that it can be submitted this year.

BRITISH ORTHOPAEDIC ASSOCIATION.

The annual meeting of the British Orthopaedic Association will be held on November 12th and 13th in London, under the presidency of Sir Robert Jones. On Friday, November 12th, the members will meet at the Medical Society of London, 11, Chandos Street, Cavendish Square, W., at 9.30 a.m. After the President's address a discussion on "The operative treatment of osteo-arthritis of the hip-joint" will be opened by Mr. D. McCrae Aitken. At the afternoon session papers will be read as follows: "The electrical treatment of the foot," by Mr. G. Murray Levick; "Fractures occurring in bone grafts," by Mr. S. Alwyn Smith; "Cysts of the external semilunar cartilage," by Mr. R. Ollerenshaw; "The treatment of stiff metacarpo-phalangeal joints," by Mr. J. A. Dickson. At 7.30 p.m. the association dinner will be held at the Royal Automobile Club, Pall Mall. On Saturday, November 13th, at 9.30 a.m., there will be a demonstration at St. Bartholomew's Hospital by Mr. R. C. Elmslie.

At the conclusion of the Harveian Oration, delivered on St. Luke's Day before the Royal College of Physicians of London, the President, Sir Norman Moore, presented the triennial Bisset Hawkins memorial medal for distinction in public health to Dr. W. H. Hamer, Medical Officer of Health to the London County Council.

PRESENTATION TO DR. J. A. MACDONALD.

The following further subscriptions have been received from October 3rd to October 18th, in response to the appeal published in the Journal of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

Ninth List of Subscribers.

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SCIENTIFIC MEDICAL WORK IN SOUTH RUSSIA.

DR. TEMPLE GREY, who has lately returned from the Crimea, sends us the following notes on the Central Bacteriological Laboratory at Sevastopol:

This institution was founded in July, 1918, by Professor Yurevitch of the Military Medical Academy (a bacteriologist) as a small diagnostic laboratory for the needs of the army, and to this end he collected in different places and establishments the remains of former military laboratories. Thus with one microscope, a small incubator, a few test-tubes and some other trifles, the laboratory railway car was equipped. It started working for the needs of hospitals in Ekaterinodar and for the armies. In September, 1918, it was transferred to one of the Ekaterinodar hospitals, where it occupied one small room, as its equipment was not large. But already, in December, 1918, in connexion with developing epidemics of typhus, relapsing fever, and typhoid, and the possibility of small-pox, cholera, and dysentery, and even plague, breaking out in spring and summer, and also in connexion with the extension of the territory occupied by the volunteer army, it became evident that a bigger laboratory was required, not only for diagnostic work, but also for the preparation of vaccines and serums; and such a laboratory was in fact established in April, 1919, from the transformed small laboratory of the volunteer army in Ekaterinodar, under the name of the Central Bacteriological Laboratory.

Among its problems were:

1. Carrying out diagnostic bacteriological and chemical research on prevailing epidemics.
2. Organization of laboratories for the front, mobile and stationary.
3. Supplying such newly-formed laboratories with equipment and materials.
4. Preparation of vaccines, serums, and lymph.
5. Chemical analysis of water, foodstuffs, pharmaceutical preparations, etc.

The laboratory was afterwards moved into another building, where it occupied five rooms and began to tackle the above mentioned problems. First the preparation of anticholera and antityphus vaccines was started. The absence of necessary media—agar-agar and peptone—was got over by preparing peptone from pigs' stomachs and the requisitioning of agar-agar from confectioners' shops. As there was an acute shortage of laboratory utensils, especially bottles and rubber corks, the laboratory staff began to make them for themselves. In this way, and enjoying the special attention of the Allies, the laboratory was able in a short time to accomplish at least part of the tasks set before it. In this period the laboratory prepared over 500,000 doses of anticholera and antityphus vaccine, several thousand various analyses were made, and four diagnostic laboratories for the front area were established out of the central laboratory's modest equipment.

Political considerations and the situation at the front forced the laboratory to be evacuated in November from Ekaterinodar to Sevastopol. On arrival there the central laboratory continued the realization of the proposed tasks. It proposed also to enlarge its activity by aiming at becoming a scientific centre in microbiology and chemistry for those who desired to do research work.

All who have been in Russia lately, in the most trying period of Russian history, realize the difficulty, if not impossibility, of starting any large undertaking. Only after three months' sojourn in Sevastopol—that is to say, in February, 1920—the laboratory began to function regularly, after having been equipped according to the programme and plan of its future work. At the present moment the laboratory is situated in one of the finest buildings in Sevastopol, where it occupies twenty-five rooms. The following departments are working: (1) Diagnostic, (2) serological, (3) vaccine, (4) chemical, (5) research, (6) Jennerian, (7) Pasteur. The proposed section for the preparation of antidiphtheritic and other serums could not be opened for lack of funds and equipment.

Research work has been on the following lines: Preparation and application of antityphus vaccine, diagnosis of relapsing fever, simplification of the preparation of peptone for culture media, the diagnosis of typhus, the Weil-Felix test, and the Winner test.

The laboratory instituted a scientific society for microbiologists and chemists, and the following reports have been read:

(1) The plague and public health measures in Odessa. (2) The organization of a Pasteur station in Odessa. (3) Winner's test for the diagnosis of typhus. (4) Cases of typhus occurring in those who had been inoculated against it. (5) The diagnosis of relapsing fever. (6) Antityphus inoculation in Sevastopol and Simferopol. (7) Cases of typhus amongst the medical personnel during the 1919–1920 (winter) epidemic. (8) On trypanosomes. (9) On sea bacteria. (10) Variations in the structure of Medusae. (11) On radio-activity. (12) Population and death rate in Sevastopol. (13) Result of the bacteriological examination of the Sevastopol aqueduct. (14) Results of the bacteriological method for the examination of water for public health purposes. (15) Experimental syphilis. (16) The new view of the nature of chemical elements.

The activities of this institution during its sojourn in Sevastopol, from February 1st to September 1st, 1920, have been the following:

(1) The preparation of antityphus vaccine and the inoculation in Sevastopol of as many as desired to be treated. (2) The setting up in Simferopol of a branch for the same purpose. (3) The establishment of a branch in Djankoy for the needs of the military medical institutions and population. (4) The supplying of the needs of the Russian Red Cross laboratory working for the troops and population near the front. (5) 3,152 bacteriological and chemical examinations of clinical and public health material. (6) The Pasteur treatment of 170 persons bitten by rabid animals. (7) Organizing the preparing of calf lymph; 500,000 doses prepared for the needs of the army and population. (8) 1,512 litres of cholera vaccine prepared and delivered. (9) 217 litres of cholera-typhus vaccine distributed. (10) Preparation of antityphoid vaccine started and 368 litres prepared. (11) Practical and theoretical post-graduate courses in bacteriology and chemistry were organized and attended by doctors intending to work in the laboratories newly opened for the needs of the army and population.

The value of the Central Bacteriological Laboratory was made evident in the last cholera epidemic, for although the conditions were favourable for its propagation, the disease never got a hold, thanks to general vaccination of the troops and its wide application throughout the population. During the whole epidemic only a few cases occurred in the army, and most of them at the outset.

The Central Bacteriological Laboratory has made great efforts and overcome many obstacles connected with the absence of necessary materials for the preparation of bacteriological media, apparatus, laboratory utensils, and so on, and has prepared in time a sufficient quantity of vaccine and supplied it to the army and the civil population. At the present moment general vaccination against typhoid has been begun, which gives the hope that the epidemic will not become largely spread.

The reserves at the laboratory, adds Dr. Temple Grey, are now almost exhausted. It is the only institution in the territory occupied by the Russian army which supplies the population and army with serums, vaccines, calf lymph, and other bacteriological products. It supplies also the needs of other laboratories (city, zemstvo, military). But it will only be able to carry out these tasks on the condition that fresh supplies are added to its scanty equipment.

England and Wales.

EXPENDITURE IN LONDON HOSPITALS.

THE honorary secretaries of King Edward's Hospital Fund for London have issued the usual statistical report on the ordinary expenditure of 109 London hospitals for the year 1919.[1] These hospitals, taken together with St. Bartholomew's and the Cancer Hospital, provided a total of 9,988 beds in average daily occupation; the total in-patient admissions were 146,585, while out-patient attendances numbered 1,318,915. The total ordinary expenditure during the year at these hospitals, including maintenance, administration, rent, rates and taxes, but excluding capital expenditure, interest on borrowed money, and contributions to the maintenance of convalescent homes and country branches, amounted to £2,137,755, of which only 3.26 per cent. was covered by aids in respect of expenditure on naval and military patients; a balance of £2,068,039 (compared with £1,611,408 in 1918) had to be met from sources of normal revenue. As the total expenditure in 1913 was £1,142,938, the London voluntary hospitals had in 1919 to provide from normal sources, as compared with the year before the war, an additional working expenditure of £925,101. This corresponds to an increase of 80.97 per cent. over the expenditure of 1913;

[1] *King Edward's Hospital Fund for London: Statistical Report on the Ordinary Expenditure of One Hundred and Nine London Hospitals for the Year 1919.* London: Spottiswoode, Ballantyne and Co. (1s. 6d. net; 1s. 9d. post free.)

the corresponding increase in 1915 was only about 4 per cent.; the increases for 1916, 1917, and 1918 were, respectively, 13, 27, and 40.9 per cent. The principal cause of the increased expenditure for 1919 was the continued rise in prices, in salaries, and in wages. Treatment of naval and military patients had for the most part ceased by the end of March; this caused general charges to be apportioned in many cases over a smaller number of patients and, together with the accompanying cessation of grants from the naval and military authorities, was to some extent responsible for the increased hospital outlay per bed, which is shown in the statistics. The average number of occupied beds increased during the war from 9,766 (all for civilians) in 1913 to a maximum in 1917 of 11,748, of which only about 8,000 were occupied by civilians; of the 9,988 occupied in 1919, 708 only were occupied by naval or military patients.

THE UNIVERSITY IN WALES.

Under this title Sir Henry Reichel, vice-chancellor of the University of Wales, has published in a pamphlet an address he gave at Cardiff last January. In discussing the relation of universities to the State he attempted to define the nature and degree of State control that should be exercised. A university, he insisted, must have academic freedom, for both as teacher and researcher the individual professor must be free to take his own line and pursue his own methods. Applied or pure science research was of importance in university life, since the discovery of new truth required a higher exercise of the intellectual powers than the assimilation of knowledge already won; it fostered a love of truth for its own sake, and was unfavourable to the cult of intellectual smartness which prided itself on being able to make the worse appear the better reason. A teacher's best was only possible while he continued to be a learner, and it was a curious psychological paradox that a man who did nothing but teach soon lost the power of teaching. Owing to the increasing expensiveness of academic equipment, particularly on the science side, and the impossibility of raising the fees without stultifying the university as a democratic agency, the modern university was not self-supporting. It must derive money either from private endowment or public subsidy. The second method was growing, and public authorities claimed the right to see that their money was properly expended. Sir Henry Reichel mentioned two ways in which the State might exercise control: in the first it earmarked its grants for a particular purpose—for example, the raising of salaries and the development of particular branches of study. Though at first sight this plan seemed not unduly to encroach on academic freedom, eventually it had the effect of fixing rigidly schemes of expenditure, and as development was governed by expenditure the institution practically came under direct State control. A second method was that by which public bodies had representation on the governing body of the university. Every county council in Wales had direct representation on the University Court, and under the new constitution this representation would be greatly enlarged. The older English universities were entirely self-governed—that is to say, they were governed by the academic expert; Wales furnished an example of a university governed by a large body democratically constituted, but on which the academic element had a certain representation. This system, under which the lay and the academic elements were in constant and living touch with each other—each side recognizing that the presence and co-operation of the other was essential—seemed to meet all difficulties. At the same time, while a university which was not truly national in spirit could not do its best work for its own people, yet if it lost touch with the international brotherhood of which it formed part, and cut itself off from the main current of human life, it would sink into comparative impotence and sterility even for its national functions. Sir Henry Reichel argued in favour of the system of the English and American universities, by which the faculties of general and professional studies were kept side by side in the same university: it was preferable to the plan adopted in Germany of establishing separate universities of technology; the two sides of university life—arts and the professional schools—had need of each other, and should be in close association. If they were divorced professional training would be tempted to neglect those deeper aspects of the subject on which its future development depended for those which promised more immediate utility, while the removal from view of the practical applications would tend to deprive the more general study of reality and living interest.

PRESENTATION TO BRISTOL UNIVERSITY OF THE PORTRAIT OF MR. F. RICHARDSON CROSS.

A portrait of Mr. F. Richardson Cross, LL.D., F.R.C.S., subscribed for by his many friends and admirers, was presented to Bristol University on October 8th, when a distinguished company assembled in the council chamber, with Mr. George A. Wills, pro-chancellor, in the chair. The Master of the Society of Merchant Venturers, who made the presentation, said that the painting of this portrait had enabled Mr. Cross's many friends to show their appreciation of the great work accomplished by him since his coming to Bristol as lecturer in anatomy at the medical school. About the same time Mr. Cross had been elected one of the surgeons of the Royal Infirmary; here, as well as at the eye hospital, he had made distinguished contributions to medical science, and had devoted his great ability to assisting his fellow men. Mr. George Wills expressed the grateful thanks of the University Council for the compliment paid them in the presentation of the portrait, and said that the important work which Mr. Cross had accomplished in the promotion of a university for the city had placed its citizens under a great debt of gratitude to him; he trusted that Mr. Cross would be spared many years to continue his beneficent work. Speaking on behalf of the academic part of the university, Sir Isambard Owen expressed gratification at the gift of the portrait, which, together with those of other great men, would be a valuable stimulus to succeeding generations of students. Mr. Edmund King, in presenting Mr. Cross with an album containing the names of the contributors, explained that no public appeal had been made for subscriptions to the portrait, a replica of which was to be hung in the eye hospital. Mr. Richardson Cross thanked the subscribers for the kind thought which had prompted them to have his portrait painted and hung in Bristol. While feeling that he had done little to deserve the honour that had been paid him, he thanked the council for permitting the recognition of any work which he had been able to accomplish for the advancement of surgical science, or for its wider application through the hospitals, medical school, and university.

Ireland.

ROYAL VICTORIA HOSPITAL, BELFAST.

Opening Address of Winter Session.

THE opening address was delivered by Mr. T. S. Kirk, surgeon to the hospital, on Thursday, October 14th, in the King Edward Memorial Hall of the hospital. Professor J. A. Lindsay, chairman of the medical staff, presided. Mr. Kirk referred in feeling terms to the serious loss the profession had suffered since they last met; five members of hospital teaching staffs had died—Hicks, Smyth, Dempsey, Campbell, and Byers—the memory of each one of whom should be a spur to a high professional life. He then came to the subject of his address, and examined the objects and methods of the old English universities, German universities, new English universities, American universities, and the Boy Scout movement. The objects of the old English universities and of the Boy Scout movement was the formation of character first and principally, then health, and thirdly knowledge. The object of the new English universities, following the German lead, and of the American, was knowledge first, health and character a poor second. In the old English institutions those of different years and with different avocational ends in view mingled together in groups and so educated each other. Examinations were not the be-all and end-all of university life. Residence, an arts course, and a broad way of teaching technical subjects were the means adopted to carry out the principle. In the old Scottish universities residence was not possible,

but a course of logic, metaphysics, and philosophy proved a help, and was compulsory and universal. The modern English university, as the German, was deficient in the character-formation quality, and so missed a powerful influence for good. The lecturer urged all students to take an interest in their university. Such institutions were of slow growth, and their worth must be judged not from examinational results but from the influence they had on the community. The authorities of the Queen's University, Belfast, had given part of their ground for the erection of the Ulster Volunteer Force Hospital: these buildings were now outliving their original purpose; the wounded soldier was now a pensioner, and these were becoming fewer; an opportunity for residences was thus opening up, and each student should see that his influence was used to build up the university as an institution which cared for character, for health, and broad education, as well as vocational training; and if these hospital buildings were changed into residences, one great defect would be temporarily remedied. Professor Lindsay conveyed the warm thanks of the meeting to Mr. Kirk for his instructive, suggestive, and interesting address, and asked each student to bear in mind the duty laid upon him.

Resignation of Colonel Deane.

At the meeting of the board of management of the Royal Victoria Hospital, Belfast, held on October 6th, a letter was read from Colonel A. Deane, superintendent of the hospital, tendering his resignation on the grounds of ill health. The board accepted the resignation with much regret, and several members bore strong testimony to the splendid services which Colonel Deane had rendered the hospital during his nineteen years of office. Colonel Deane was Inspector-General of Hospitals in Punjab, before retiring from the Indian Medical Service; on his return to England he was very soon appointed to his present post in room of the late Colonel Glancy. He conducted the transference of patients and staff from the old buildings in Frederick Street to its present site in 1903, with care, quickness, thoroughness, and safety, so as to win eulogiums from all: a building which had not closed its doors for over a hundred years, and was one morning full of patients and the scene of unwonted activity, was silent and empty, with locked doors, the same evening. In the new buildings he smoothed difficulties, aided the resident staff with discreet advice, and won the goodwill of all with cheery words and kindly actions. The medical profession, and especially the visiting staff, who came into close and constant contact with their superintendent, will join their board of management in their best wishes for a happy and long rest, so well deserved, from his strenuous labours.

Scotland.

CONFERENCE ON PAYMENT OF HOSPITAL STAFFS FOR STATE-AIDED PATIENTS.

THE second conference of representatives of staffs of voluntary hospitals in Scotland, convened by the Hospitals Subcommittee of the Scottish Committee, to consider the Memorandum of the British Medical Association on payment of staffs of voluntary hospitals for the treatment of State-supported patients, will be held on Saturday, October 30th, at the North British Station Hotel, Edinburgh, at 2.30 p.m. The first conference took place on July 29th, and was reported in the SUPPLEMENT of August 21st, at p. 66.

SMALL-POX IN EDINBURGH.

An outbreak of small-pox is reported to have occurred at Craiglockhart Poorhouse, Edinburgh. Six cases were notified during the close of last week; all the patients are elderly persons. The other inmates of the institution have been placed in quarantine. During the past summer upwards of 450 inmates of the poorhouse were vaccinated, but none of those now infected took advantage of the opportunity. It is supposed by the medical officer of health for Edinburgh that the present outbreak is due to some inmate suffering from small-pox in an undetected form.

GIFT TO EDINBURGH ROYAL INFIRMARY.

The trust fund, amounting to about £700,000, bequeathed by the late Mr. David Ainslie, of Costerton, Midlothian, to the Edinburgh Royal Infirmary for convalescent homes for patients, is about to become available.

Correspondence.

THE MUNICIPALIZATION OF HOSPITALS.

SIR,—I was much interested in Dr. Buttar's account of the municipalization of the Poor Law Infirmary in Bradford (in your issues of October 2nd and 9th), as I had no idea that a change of such far-reaching effect on the medical profession had already taken place.

I understand that a bill is being brought in by Dr. Addison to enable a considerable extension of such undertakings, and I am naturally anxious to know whether this is in accordance with the views of the Consultative Council of Medical and Allied Services, which has Lord Dawson of Penn as its head, or whether the bill is being brought forward without the advantage of its consideration.—I am, etc.,

London, W., Oct. 18th. F. C. MARTLEY.

TUBERCULOUS MILK.

SIR,—There is nothing new in the hypothesis that immunization may be produced by the ingestion of small doses of the tuberculous poison, and I fail to grasp the reason for Dr. Galbraith's pronouncement that this conveys a pernicious half-truth. In view of the fact that most of the population is at some time or other infected with tuberculosis, and fortunately enabled to resist the infection, it is obvious that there must be frequent exposure to infection. And it is generally admitted that the great source of food infection is milk and its products.

Dr. Galbraith states that "the 10,000 children under 5 years of age who die annually in England and Wales from tuberculosis have evidently ingested an immoderate amount of the tuberculous poison." Surely he, too, should be "absolutely sure of *his* grounds before *he* makes statements on highly controversial subjects." It is possible that many of these children have been infected in other ways.

Although tuberculous milk may cause infection, it is probable that its infective virulence is over-estimated. In a report by A. Weber of a German Government investigation (1905–9), milk from cows with tuberculous udders had been consumed fresh and as butter, cheese, etc., by 209 adults and 151 children. Only two had developed tuberculosis, and others of the families taking the same milk were unaffected. The two cases were mild cervical adenitis in young children; the udder infection of the cow was severe, and the milk had been taken for one and one and a half years. And in feeding experiments on animals huge doses of the bacillus have to be given to produce infection.

In a letter to the *Lancet*, July 8th, 1909, on the frequency of tuberculosis in the first year of life, I pointed out that in 9 out of 17 fatal cases the source of infection was probably via inspired air, while in 8 the probability of infection via cow's milk was greater. Hamburger in 1913 stated that a single exposure to infection from "open" tuberculosis may set up the disease in the child, the primary lesion being in the lungs in 95 per cent., and it may confer a certain degree of immunity. I certainly agree with this view. On the other hand, I have known fatal tuberculosis occur in a healthy breast-fed infant shortly after being fed on cow's milk, but I have no evidence that the milk was tuberculous or that the child had not been exposed to other sources of infection.

Many more arguments could be advanced pro and con, but I am only writing this letter to indicate the importance of not attaching too much importance to infection by milk and too little to direct infection. In my opinion the prevention of the disease in children consists in the avoidance of exposure to infection and the maintenance of good general health and hygiene. If too much stress is laid on milk infection, other measures of prevention may be neglected. The seed is widely disseminated, the soil must be made unsuitable for its growth.—I am, etc.,

London, W., Oct. 18th. EDMUND CAUTLEY.

SIR,—I have read with interest Dr. Galbraith's letter (October 16th, p. 610) in reference to Dr. Marcus Paterson's remark about tuberculous milk, "that a moderate amount of tuberculous poison during childhood may have an immunizing effect in the long run." I am strongly of opinion

that there is no positive evidence of immunization in tuberculosis at all. All the weight of evidence is on the other side, more particularly the clinical evidence. What competent physician, if asked the question, would say that a person who had suffered at one time from tuberculous cervical glands was therefore less liable to contract other forms of tuberculosis, or that anyone who had recovered from spinal caries was on that account less liable to be attacked by pulmonary or other forms of tuberculosis? These questions answer themselves. I addressed a letter to two eminent bacteriologists asking them what experimental evidence there was proving that susceptible animals could be made immune against tuberculosis, but failed to elicit any statement that such was an established fact. Anyone who cares to refer to a textbook of bacteriology on immunization in tuberculosis will find that the results of the experiments conducted by von Behring and others are very conflicting; and what little evidence there is in favour of it is very open to criticism.

That the benefits of graduated exercise (in the fresh air) are due simply to immunization is, in my opinion, a pure assumption, and that the phagocytic power of the blood is improved by this treatment seems to me to be no evidence whatever, as it would occur in any person not necessarily tuberculous. It seems to be assumed by many members of the profession that all bacterial infections confer immunity to subsequent attacks, but one has only to think for a moment to remember that this is not so—erysipelas, for instance, rheumatic fever, influenza, ordinary septic wound infections, pneumonia (acute croupous), gonorrhoea, nasal catarrh, etc. To use vaccines for the prevention of such seems to me mere silliness, but I suppose I am only a voice crying in the wilderness in this matter.—I am, etc.,

EDGAR R. IVATTS, M.R.C.S., L.R.C.P.
Late Assistant Tuberculosis Officer, Stoke;
Resident Officer, Stanfield Sanatorium, Burslem.

Aylesbury, Oct. 17th.

SIR,—In your issue of October 16th Dr. Galbraith has exposed one of the anomalies of the infection theory of tuberculosis. One cannot curse the tubercle bacillus for being the cause of tuberculosis and in the same breath bless it as a friend and immunizer of the consumptive.

Dr. Marcus Paterson's suggestion that a moderate amount of tuberculous poison has an immunizing effect on the children is based on the theory that they get tuberculosis from drinking cow's milk. If this be true, how is it that the poor children, who drink less milk, have more tuberculosis than the well-to-do classes who drink more? And how is it that in countries like Japan, China, India, etc., where children are breast-fed for many months and where little or no milk is drunk, tuberculosis is widely prevalent among those people, including children? Kitsato says that the use of cow's milk for feeding infants is unknown in Japan, and that the native cattle do not suffer from tuberculosis, and yet intestinal and meningeal tuberculosis are as common as in the chief cities of Europe. Again, a well authenticated case is reported from New York, where a special herd of Jersey cows, which had supplied all the children of the richest families for a number of years, were found to be tuberculous, and the doctors who formed a committee to examine these children found among those hundreds of children only one girl of 13 who showed any signs of tuberculosis. Ungermann in Germany found that among 687 consumers of milk from cows with udder tuberculosis 280 were children, the majority of whom enjoyed good health; there was a suspicion of bovine infection in 14, and in only one there was found infection with bovine strain.

With such facts before us, which could be multiplied, how is it possible to believe that tuberculosis in children is caused by drinking cow's milk? In fact, the tendency of modern thought is to challenge the whole germ theory of tuberculosis and to shift the angle of vision from specific to social causes of the disease. (*a*) The tragedy of the great war in Central Europe has demonstrated not in one or two but in thousands of instances that rickets and tuberculosis were the outcome not of ingestion of milk but the want of it, and of chronic starvation, underfeeding, and malnutrition. (*b*) Biochemistry has shown that the problems of immunity are not bacterial but chemical problems. (*c*) The social sciences, including clinical results in various sanatoriums, have proved that improvement in hygiene and feeding conditions can cure and prevent tuberculosis in children.

No theory or treatment of tuberculosis based on infection has hitherto proved satisfactory. It is time that we surveyed tuberculosis from broad facts of life derived from every branch of science, and studied less of microbes and more of man and his social and moral environment to find its true etiology.—I am, etc.,

Mendip Hills Sanatorium, Oct. 18th. C. MUTHU.

THE MOBILE PROXIMAL COLON.

SIR,—Mr. Waugh's courteous, if somewhat satirical, comments on my paper in the JOURNAL of October 9th demand a reply, for which I ask your indulgence. The criticism of Mr. Waugh's theory which I had the temerity to make applied, not to his article in the *British Journal of Surgery* as a whole, for with much of it I find myself in cordial agreement, but to his arresting and I think unsubstantiated theory that duodenal and gastric ulcers are due to the mechanical downward traction of the mobile proximal colon, acting through its mesocolon upon the duodenum or stomach respectively. My criticisms of this theory were made in the course of a consideration of the etiological relations of the mobile proximal colon with these ulcers, and if, as Mr. Waugh says, they only deal with the fringe of the subject as a whole, I think they go fairly near the centre of this portion of it.

Mr. Waugh apparently objects to my quoting "apart from its context," a sentence from the middle of his article to the effect that "the second part of the duodenum is the site most liable to ulceration." But I find that in the section on Local Effects he also says, "This strain" (that is, the downward drag of the loaded mobile colon) "falls directly upon the anterior surface of the right kidney, *the second part of the duodenum*, and, by radiation, upon the pyloric region of the stomach, the cystic duct, and, in some cases, upon the under aspect of the gall bladder." (The italics are mine.) Further, of the six cases of proved duodenal ulcer in his series, in four the ulcer was in the second, and in only two in the first, part of the duodenum. The distribution of duodenal ulcers in his series, and Mr. Waugh's definite statement as to their usual distribution, are so much at variance with the experience of the surgeons (Moynihan states that 95 per cent. of duodenal ulcers are in the first part of the duodenum) as to raise grave doubts regarding the soundness of Mr. Waugh's theory.

When I said that Mr. Waugh does not attempt to justify his hypothesis that a gradual drag exerted on the peritoneal aspect of the duodenum or stomach would produce ulceration of their mucosa, I meant that the great difficulty, from the pathological point of view, of accepting such a novel conception did not appear to have occurred to him. I should, perhaps, have said that he does not succeed in justifying it. So far as I can see, however, on re-reading his article with great care, his only attempt to justify this theory lies in the records of four cases of gastric ulcer and six of duodenal ulcer who did remarkably well after colopexy, without any operation being done on the stomach or duodenum. But clinical results alone are so difficult to evaluate with accuracy, owing, amongst other reasons, to the inveterate tendency of mankind to feel better after almost any abdominal operation, and the number of these cases is so small, that one looks for some solid pathological facts as a basis for the theory, and looks in vain.

I attach great importance in this connexion to Mr. Waugh's statement that, "If the mode of formation of these ulcers has been rightly assumed, then . . . a mobile ascending colon should be present in all cases." It is a crucial test. Mr. Waugh questions the validity of my statement that I have often been unable, in cases of proved gastric or duodenal ulcer, to expose the appendix through the ordinary upper right rectus incision, owing to normal fixation of the ascending colon, and he questions it on the ground that such an incision is inadequate. But in several such cases I have had occasion to prolong that incision downwards and remove the appendix, and have thus been able, by inspection and palpation of the ascending colon in its whole length, to demonstrate its normal fixation beyond the possibility of doubt.

Mr. Waugh admits with the utmost candour that if his theory be true a mobile proximal colon should be found in

all cases of gastric or duodenal ulcer. I have satisfied myself, though not, unfortunately, Mr. Waugh, that the relationship which he claims is not constant, and having done so I feel justified in rejecting quite definitely Mr. Waugh's mechanical theory of the causation of these ulcers. A working hypothesis which fails to fit in with readily ascertainable anatomical and pathological facts obviously breaks down.

The practical bearings of this controversy are of very great importance, for were Mr. Waugh's theory to be held established, it would follow that the operations at present in vogue for duodenal and gastric ulcers would be obsolete procedures, and would give place to simple colopexy. No one would be so conservative as to insist that gastro-enterostomy for duodenal ulcer and gastrectomy for gastric ulcer are the ultimate word of surgery on this subject, but that they are therapeutic measures as sound in conception and as efficacious for the relief of human suffering as almost any operations in surgery, is a view that has a formidable body of evidence to support it. Very few surgeons, even though they be as convinced as I am that in some way a mobile proximal colon does predispose to these ulcers, will feel justified in treating them by simple fixation of the colon until Mr. Waugh or others have advanced far more cogent reasons than have yet appeared.

Having said this much, I wish to express regret for any apparent incivility in the brevity and, as he put it, the "incisiveness" of my original reference to Mr. Waugh's article. That article is, of course, the most considerable contribution to the subject that has appeared in English since Coffey's well-known paper[1] in 1912; and if I only referred to that part of Mr. Waugh's work with which I find myself in somewhat violent disagreement, I must plead the limitations of time and space in a post-graduate lecture in which there was a good deal of ground to cover.—I am, etc.,

Manchester, Oct. 18th. JOHN MORLEY.

INTRAVENOUS INJECTION OF ANTIMONY.

SIR,—In reference to Dr. F. F. Elwes's letter in your last issue on antimony in kala-azar, I believe that it was in the treatment of sleeping sickness that intravenous injections of tartar emetic were first given at the London School of Tropical Medicine.

During the last few years I have had considerable experience of its use in this connexion. We have found that it was best to begin with doses of gr. j in adults and of gr. ss in young people aged 12 and upwards. The dose is gradually increased; after three injections the dose is commonly increased to gr. jss, and so on, according to how the patient stands the previous injection, up to gr. ijss.

The dose is always dissolved in 10 c.cm. of distilled water, normal saline being injected both before and after the tartar emetic. This injection is usually given once a week, alternating with intramuscular injections of soamin or one of the allied arsenic compounds. In this way it is hoped that the one drug will fortify the action of the other, and the cumulative effect of the antimony will be less marked. In my experience it is unwise, as a rule, to give as much as gr. iij of tartar emetic, as this dose is commonly followed by very persistent vomiting, and in two or three instances I have lost patients, who previously had shown every sign of health, from acute cerebral symptoms.

I should say that my patients in Central Africa have rarely weighed more than 8 stone. I have noted no ill effect from a dose of 3 grains in any patient weighing more than 8 stone.—I am, etc.,

Birmingham, Oct. 18th. E. R. JONES.

EMETINE IN BILHARZIASIS.

SIR,—In the discussion at Cambridge on a paper by Dr. Philip Manson-Bahr on the treatment of human trypanosomiasis and kala-azar, Dr. A. Balfour mentioned that certain practitioners in Egypt prefer the action of emetine in bilharziasis to that of antimony. This is interesting news. Can Dr. Balfour inform us if emetine is injected also directly into the veins? I have not yet seen it recommended for intravenous injection. If this can be safely done, it would be a great advantage, as the hypodermic or intramuscular injections usually leave a rather sore place for several days; and this method might also be adopted in dysentery. If it is just as efficacious as tartar emetic, then a drug less toxic than the latter has already been found. It would greatly interest me, and no doubt many others working in bilharzia-stricken districts, to know exactly what dosage and in what way emetine hydrochloride is to be administered for the cure of bilharziasis, and if it is a certain cure.—I am, etc.,

Rustenburg, Transvaal, Sept. 21st. S. J. D. ESSER.

[1] Coffey: *Surgery, Gynaecology, and Obstetrics*, vol. xv. 1912. 365.

THE CONSULTATIVE COUNCIL'S REPORT.

SIR,—As an officer of a Division mainly rural in character and embracing some seven hundred square miles in which railway intercommunication is valueless for the purpose of Divisional meetings, I desire to enter a protest against the way in which the profession is being rushed in the matter of consideration of the interim report of the Medical Consultative Council.

The report itself was reprinting from about midsummer till the first week in September, when it again became available, so that for about three months when we might be supposed to be considering it the first-hand document could not be obtained. Now, within three weeks, Divisions are asked to consider the report, with the digest made by the head quarters committee, and give considered replies to nineteen questions.

In an area such as this it will not be possible to have more than one satisfactory Divisional meeting in the time allowed, so that the time available for discussion, granting two hours for the meeting, will average about six minutes per question.

However fully each member will have studied the Report and Memorandum at home, it will be conceded, I think, that such time is wholly inadequate to obtain the interchange of opinions which is desirable, and consequently head quarters will get to the questions submitted answers which, in the light of further and more detailed discussion, might have to be repudiated, or at any rate very greatly modified or qualified.

I am strongly of the opinion that a full year should be allowed to Divisions for the consideration of the Report and the questions submitted, and think there will be many members, especially in widespread divisional areas, who will be of the same opinion.—I am, etc.,

A. E. HODDER,
Stafford, Oct. 17th. Chairman, Mid-Staffordshire Division.

TREATMENT OF INOPERABLE CANCER.

SIR,—We are all agreed that at the beginning cancer is a local disease, and that thousands who now die could be saved by early operation. But what about the thousands who come to us for the first time too late for operation? Can anything be done for them?

From information which I obtained during my recent stay in Paris I feel justified in appealing to my fellow practitioners to give these unfortunate people the benefit of the simple, painless, and harmless treatment with an organic preparation of arsenic in the form of cacodylate of soda (sodium dimethylarsenate). I have been using it for more than ten years in nearly every disease in which arsenic is indicated, and always with the greatest satisfaction; but it is only recently that I have learned of its great possibilities in cancer.

The only way in which to test its value is that a great many doctors should give it a fair trial in several thousands of cases, say for a year. It is put up in ampoules ready for hypodermic use by Clin of Paris and Parke Davis of London. Begin with 5 cg. (¾ grain) every day for fifteen days, by which time 75 cg. (or 12 grains) will have been given. Then leave it off for a week. If any bad effects on the heart or blood pressure are observed, give an ampoule of adrenalin hypodermically. Some doctors told me they were giving an ampoule of nuclein on alternate days.—I am, etc.,

London, W., Oct. 17th. A. LAPTHORN SMITH.

"DEATH AFTER TONSILLECTOMY."

SIR,—Dr. Sladden, in answer to inquiries, states that chloroform was the anaesthetic used in the case reported by him (BRITISH MEDICAL JOURNAL, October 9th, 1920, p. 569). I should like to ask why it was chosen.

I wrote a letter on the mortality of chloroform as contrasted with ether (vide *Lancet*, vol. ii, 1890), giving the number of deaths in the United Kingdom for three years, there being 44 from chloroform and only 4 from ether. I stated emphatically that under no circumstances whatever should chloroform be given in dental surgery, and I would now add neither for tonsil and adenoid operations, especially in the decade of 10–20 years, which I found especially dangerous for chloroform.

Though not an anaesthetist specialist, it has been my duty to give anaesthetics during several house-surgeoncies, at any rate in major operations—six years at Norfolk and Norwich Hospital and at Manchester Children's Hospital—and during twenty years as member of honorary surgical staff of the Children's Hospital, Norwich, I have never even witnessed a death from an anaesthetic. I therefore feel justified in trespassing on your space. It has been my practice to begin with, for children, some of the modern mixtures—A.C.E., C.E.; or ethyl chloride, gas and ether, or O; or to use from 3 to 6 per cent. chloroform in ether. After such induction chloroform may be given, especially if a deeper anaesthesia is necessary. I should also like to ask, Was this boy watched in the recovery room by the anaesthetist or medical man, in addition to a nurse, until he had sufficiently recovered to be safely left? Coroners are now getting very "up-to-date," and have asked medical witnesses to explain *why* chloroform was used.—I am, etc.,

London, Oct. 18th. H. CHESTER NANCE, F.R.C.S.Eng.

PROPHYLACTIC VACCINATION AGAINST INFLUENZA.

SIR,—May I point out that the work on prophylaxis in connexion with influenza was carried out by Lowe and myself on the N.Z.E.F. here in England, and not in New Zealand as stated in your article ("Experience of prophylactic vaccination against influenza") in the issue of the BRITISH MEDICAL JOURNAL for October 16th, 1920? It was from this work that our conclusions—which were correctly given—were drawn. Incidentally, I may say that in many of the camps vaccine was given *after* the appearance of the epidemic!—I am, etc.,

Guy's Hospital, S.E.1., Oct. 19th. J. W. EYRE.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation, held on October 15th, the following medical degrees were conferred:

M.D.—R. S. Taylor (by proxy), R. S. Woods.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on October 14th, when Sir Anthony Bowlby, President, was in the chair.

Mr. J. Herbert Parsons, Dr. F. Willoughby Lyle, and Mr. E. Treacher Collins were appointed as examiners for the diploma in ophthalmic medicine and surgery; and Sir Frederick Mott as an examiner for the diploma in psychological medicine.

Diplomas in tropical medicine and hygiene were granted to thirteen candidates (jointly with the Royal College of Physicians). Diplomas in ophthalmic medicine and surgery were granted (jointly with the Royal College of Physicians) to ten candidates.

Thanks were given to Sir Rickman Godlee for his presentation to the museum of a series of one hundred stereoscopic *x*-ray plates of clinical subjects.

The annual report to be presented to the Fellows and Members at the annual meeting on Thursday, November 18th, was approved and adopted.

Mr. Rupert Hadley Scott, formerly of Epsom College, was appointed as the twenty-eighth Jenks scholar.

The Thomas Vicary lecture will be delivered by Sir D'Arcy Power on Thursday, November 11th, at 5 p.m.: "The education of a surgeon under Thomas Vicary." The Bradshaw lecture will be delivered by Sir Berkeley Moynihan on "The surgery of diseases of the spleen," on December 16th, at 5 p.m.

CONJOINT BOARD IN SCOTLAND.

THE following have been approved at the examination indicated:

FINAL.—*Medicine:* J. B. Macdonald, H. G. FitzMaurice, J. Murray, A. Cuthbertson, P. Parthasarathy, J. B. van Cuylenburg, F. X. H. Hayes, Gracie O. D. Evans, W. G. Carew, P. F. Fairley. *Surgery:* A. Tirumalaiya, J. B. Macdonald, J. Black. *Midwifery:* A. Tirumalaiya, H. Brown, P. Parthasarathy, J. Black, J. B. van Cuylenburg, G. ap Vychan Jones, F. X. H. Hayes, Gracie O. D. Evans. *Medical Jurisprudence:* W. B. Stott, C. J. Lamprecht, A. V. Bergh, I. F. McAsh, A. W. Hart, D. Ciantar, W. A. B. Clark, S. Sack, F. Walwyn, J. McN. Campbell, A. Cuthbertson, R. Levey, H. J. Appleyard, D. J. Dubash, W. D. Oswald, W. Gray, Jane Copes.

The following candidates having passed the Final Examination were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

Sylvia E. Aldous, W. A. Ruble, J. P. Crichton, C. Holmes, W. W. Clucksman, A. Furniss, W. F. G. Radford, H. J. Louw, Kathleen E. H. Rutherford, C. S. G. Pillai, V. K. Paramanayagam, Dorothy M. McCullagh, A. W. Smith, D. Mackay.

ANDERSON COLLEGE OF MEDICINE, GLASGOW.

DR. NOAH MORRIS, Assistant to the Professor of Physiology in the University of Glasgow, and Dr. John R. C. Gordon have been appointed to the Chairs of Physiology, and Materia Medica and Therapeutics respectively.

The Services.

HONOURS.

THE King has, at the conclusion of the Prince of Wales's tour to Australia and New Zealand, conferred the honour of M.V.O. (fourth class) upon Surgeon Commander A. C. W. Newport, R.N., H.M.S. *Renown*.

TERRITORIAL DECORATION.

The Territorial Decoration has been conferred upon Surgeon-Major William M. Taylor (honorary lieutenant in army), 1st Lowland Brigade R.F.A., Lieut.-Colonel Frederick Whalley, D.S.O., 2nd West Riding Field Ambulance, R.A.M.C.(T.F.), Major John O. Summerhayes, D.S.O., 1st South Midland Field Ambulance, R.A.M.C.(T.F.), and Lieut.-Colonel Charles W. Eames, D.S.O., attached 2nd West Riding Field Ambulance, R.A.M.C.(T.F.Res.).

Officers of the army residing in the United Kingdom who have been awarded the D.S.O. but have not yet received their decorations should apply to the Secretary (C 2 Investitures), War Office, Whitehall, S.W.1, to have their names included in the lists for the forthcoming investitures by the King. It is particularly desired that all such officers should attend for investiture before the end of the present year.

THE following information has been sent to us by the Ministry of Pensions: In pursuance of the policy of decentralization, the Minister of Pensions has now delegated authority to the Regional Directors to deal with individual applications for the supply of surgical and artificial appliances (other than artificial limbs), spectacles, dentures, and dental treatment, which hitherto have been referred to the head quarters of the Ministry in London. Pensioners will continue to address such applications in the first instance to Local War Pensions Committees, who will, when necessary, refer the case to the Regional Director instead of to the Ministry in London. The two principal conditions which govern the provision of these appliances or of dental treatment at the public expense are: (1) That the defect which renders the supply necessary has been accepted by the Ministry as being a disability attributable to or aggravated by military service; or (2) that the pensioner is undergoing a course of duly authorized treatment in or at an institution for his service disability and the supply of an appliance or dental treatment is necessary for the efficacy of that treatment.

Obituary.

JAMES LEITH WATERS, M.B., C.M.EDIN., HULL.

WE regret to announce the death of Dr. James Leith Waters on September 22nd, at his residence in Hull, at the age of 62 years. He graduated M.B., C.M. at Edinburgh University with honours in 1879, when he obtained the Wightman Prize in Clinical Medicine. At that time the science of surgery was undergoing great changes due to the introduction of antiseptics by Lister. Dr. Waters was one of his clerks in the wards of the Royal Infirmary, Edinburgh, and he often spoke with pride and affection of the great surgeon. After graduation he held the following posts: demonstrator of anatomy under Sir William Turner; house-surgeon to Professor Annandale; resident physician to the Hertford British Hospital in Paris; and for two years was senior house-surgeon at the Cumberland Infirmary, Carlisle. He then commenced practice in Caithness, his native county, and went to Hull in 1890. In Hull Dr. Waters identified himself not only with the medical institutions, but with the literary and social life of the city. He was a loyal member of the British Medical Association, a past president of the Hull Medical Society, and also of the Caledonian Medical Society. At his death he was senior surgeon of the Hull Women's Hospital, with which he had

been connected for many years. He was a sound and able operator.

Dr. Waters was a great general reader and had a thorough knowledge of English classics. He was a purist and had a great contempt for looseness and the slang of present-day English. He had a close knowledge of French literature and was a keen admirer of French culture and thought. He was one of the founders of the French circle in Hull and was a past-president of the Hull Literary Club, an office he filled with distinction. In personal circles Dr. Waters was regarded as a man with lovable, large-hearted, and unselfish qualities, and he was highly esteemed, especially by his poorer patients, for his kindness and consideration.

The funeral was largely attended by his friends and members of the various institutions with which he had been connected.

Medical News.

THROUGH the gift of an anonymous Fellow the Royal Society of Medicine has been able to institute a triennial gold medal open to medical practitioners throughout the world. The donor expressed the hope that the first award might be made with special regard to valuable services during the war. Sir Almroth Wright, F.R.S., has been chosen as the first medallist, and the presentation will be made to him by the President of the Society, Sir John Bland-Sutton, at 5 p.m., on Thursday, November 11th (the second anniversary of Armistice Day) at 1, Wimpole Street, and Sir Almroth Wright will afterwards give an address on medical research.

THE Middlesex Hospital annual smoking concert, in aid of the Cancer Charity, will be held at the Queen's Hall on December 10th. The tickets will shortly be issued, and early application should be made to the honorary secretary, Mr. E. W. Smith.

THE Tuberculosis Group in the Society of Medical Officers of Health will hold its first ordinary general meeting at the National Institute of Medical Research, Mount Vernon, to-day (Saturday, October 23rd), at 11 a.m., when Dr. Leonard Hill will read a paper on open-air treatment and metabolism, illustrated by laboratory methods of research.

AN elementary course of twenty lectures on practical statistics will be delivered at University College, London, by Ethel M. Elderton, on Mondays and Thursdays, at 4.30 p.m., beginning October 25th. The class is suitable for those desirous of obtaining an elementary knowledge of the methods of modern statistics. The fee for the course is £2 2s.; application for tickets should be made to Dr. Walter W. Seton, Secretary, University College, Gower Street, W.C.1.

FOUNDERS' DAY at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C., will be celebrated on Tuesday afternon, November 2nd. There will be a service in the chapel at 3 p.m., and tea in the board room and hall from 3.30 to 4. The wards and other features of the hospital will be open for inspection from 3 to 6 p.m.

UNDER the direction of M. Georges Laurens, assisted by MM. Hubert and Girard, instruction in the surgery of the ear, nose and throat is now given daily at the St. Joseph Hospital, 1, Rue Pierre Larousse, Paris. The course began on October 1st. Two special classes have been arranged: an elementary course of nine lessons for students and graduates, beginning on November 1st, and an advanced technical course of twenty-six lessons for graduates, beginning on November 2nd.

AT a special general meeting of the Royal Society of Tropical Medicine, held on October 15th, it was unanimously agreed that the annual subscription be raised from one guinea to one guinea and a half as from April 1st, 1921, and that the composition fee be raised on the same date from £15 15s. to £23 12s. 6d.

A TABLET to the memory of the late Dr. J. Biernacki has been placed in the Plaistow Fever Hospital, and was unveiled by the Mayor of West Ham on October 14th. After an opening prayer by the Rev. Father Andrew, speeches appreciative of the work of the late superintendent of the hospital were made by the mayor and by the chairman and ex-chairman of the West Ham Public Health Committee. Among those present was a large gathering of medical practitioners from West Ham and adjoining districts.

LORD and LADY COWDRAY have presented No. 20, Cavendish Square, to the College of Nursing to become the head quarters of the college. The premises will provide accommodation for examination, lecture and class rooms, and a residential club.

THE Glasgow University Club, London, will hold a dinner at the Holborn Restaurant on Thursday, November 25th, with Viscount Bryce, O.M., in the chair. Members of the university desiring to attend may communicate with the secretaries at 30, Seymour Street, W.1.

THE twentieth Congress of the Italian Society of Obstetrics and Gynaecology will be held at Pavia next week, when haemorrhagic metritis and radio-therapy in gynaecology will be the principal subjects discussed.

A COMMITTEE of the German Dermatological Society, consisting of Dr. Blaschko of Berlin, Dr. E. Hoffmann of Bonn, and Dr. Jadassohn of Breslau has been formed to make a collective investigation on the abortive treatment of syphilis.

THE Central Midwives Board for England and Wales, at its meeting on October 14th, with Sir Francis Champneys in the chair, decided to inform the Ophthalmological Society of the United Kingdom that the Board hopes advantage will be taken by medical students and midwives of the facilities offered by the Metropolitan Asylums Board for holding classes in connexion with the diagnosis and treatment of ophthalmia neonatorum. In consequence of the great increase in the cost of printing the Midwives Roll, 1920, over the cost of printing previous copies, it was decided that the price of the 1920 Roll be two guineas.

THE will of the late Dr. Lloyd Roberts of Manchester, an obituary notice of whom appeared in the JOURNAL of October 9th, contains the following interesting bequests: To the Rylands Library, Manchester, such of his bound books as the trustees may select; to the Corporation of Manchester, for the Art Gallery, such of his mezzotints, water-colours, and paintings as they may desire; to the Royal Society of Medicine £5,000; to St. Mary's Hospital, Manchester, £5,000; to Manchester Royal Infirmary, £3,000; to the Royal College of Physicians, London, £3,000; to the Medical Society of London, £2,000; to St. David's College, South Wales, £2,000. The residue of his estate is left to University College, Bangor, with provision that £5,000 be set aside to found a Lloyd Roberts professorship in any subject the authorities think fit.

ACCORDING to *Il Policlinico* the Palermo hospitals have had to be closed owing to inability to pay their staff.

A RECENT medical examination made by the American Red Cross in Algeria and Tunis has shown that in the cities in the oases of the Sahara 10 per cent. of the indigenous population is blind, while in France there are only 3 blind persons per 1,000 inhabitants. The examination also showed that trachoma was prevalent among native and European children; of 6,025 children examined in various parts of Algeria, 1,650, or 24 per cent., had trachoma, and in the large cities on the Mediterranean 25 per 1,000 of the inhabitants were blind.

A LETTER has been sent to professors of arts and sciences in Germany and Austria by some sixty doctors, heads of houses, professors, and other officers and teachers in the University of Oxford, expressing the belief that many of those they address will share the signatories' heartfelt sorrow and regret for the breach the war occasioned in the friendly intercourse between the learned of the two countries. The letter, it is said, is sent with "the desire to dispel the embitterment of animosities that under the loyal impulse of loyal patriotism may have passed between us. The fellowship of learning," the letter continues, "offers a road which may—and if our spiritual ideals be alive, must—lead to a wider sympathy and better understanding between our kindred nations. While political dissensions are threatening to extinguish the honourable comity of the great European States, we pray that we may help to hasten that amicable reunion which civilization demands." We understand that Dr. Robert Bridges, the poet laureate, has been active in obtaining signatures to the letter, but it would appear that the majority of those approached have declined to sign. Possibly they feel that the first move should be made by German professors and teachers, including those who signed the notorious manifesto at the beginning of of the war.

THE fourth congress of the Far Eastern Association of Tropical Medicine will be held in August, 1921, at Batavia, the capital of the Dutch East Indies, under the presidency of Dr. W. T. de Vogel. The last congress took place in 1913 at Saigon, the capital of French Cochin China.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London:* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"C. G. W."—The deduction of one-tenth of the earned income (subject to a maximum deduction of £200) should be made by the income-tax officials.

"COTSWOLD" is a partner in a firm whose average liability under Schedule D is based on the sum of £1,341; his share of that sum is £894. What is his liability?

*** His liability would be computed as follows:

	£	s.	d.
Earned income	894	0	0
Deduct earned income relief—that is, 10 per cent.	89	0	0
Assessable income	805	0	0
Allowances, self and wife... ... ... £225			
Children ... ... 144—	369	0	0
Income chargeable to tax...	436	0	0
Of which £225 is chargeable at 3s.	33	15	0
And £211 is chargeable at 6s.	63	6	0
	97	1	0

This amount is subject to the deduction for life assurance, but, on the other hand, it does not include the liability in respect of War Loan interest—£90 at 6s.—or that arising on the other partners' share of the assessment. The income tax assessment appears to assume that the practice is worked by a single proprietor; possibly one of the partners has not made his formal declaration, as a member of the firm, to the local inspector.

FURUNCLE OF ANTERIOR NARES.

DR. J. F. MURPHY (Pickering) writes in reply to "M.D.": I have just cured a patient of this condition, which had lasted some months, by rubbing in every night collosol sulphur prepared by the Crookes's laboratory.

"ANOTHER M.D." writes: "M.D." will find some benefit by insisting on his patients cutting short the hairs, or bristles, with which some people's nostrils are plentifully endowed. When detaching the crusts which adhere to these hairs the latter are often pulled out, and in this way the organisms gain entrance. Most people, especially those who are liable to nasal catarrh, would be much healthier if they adopted this procedure; it only requires to be done once or twice a week.

LETTERS, NOTES, ETC.

MESSRS. A. AND F. PEARS, LTD., have sent us samples from new consignments of Pears' soap which they state have been maturing for eight months in the special room set apart for that purpose at the Isleworth works. The samples appear to us to maintain fully the standard which the public and the medical profession have learnt to expect of this soap. The tablets, on section, are transparent and homogeneous.

BULLINUS OR ISIDORA.

THE deplorable confusion into which zoological and botanical nomenclature has been thrown is so well known that no surprise will be excited by a demand for the abandonment of the term *Bullinus* for the fresh-water mollusc which is the intermediate host of bilharzia. The name was used by Leiper in his report to the War Office on the bilharzia mission to Egypt. Kennard and Woodward now allege that about the middle of the eighteenth century the name was applied to an immature shell and therefore must not now be used for the bilharzia carrier; they suggest *Isidora*, a name introduced by Ehrenberg in 1831 for certain Egyptian and Syrian physoid molluscs. Suggestions of this kind have a pedantic air, and sometimes it turns out that they are not accepted by other specialists. It is to be hoped that no change will be made in medical textbooks until the malacologists have made up their minds.

AN INTENSIFIER FOR GAS FIRES.

MR. CHARLES WRAY, F.R.C.S., has devised a simple apparatus for increasing the efficiency of a gas stove. It consists of a square horizontal brass tray on legs, with two short vertical side-wings of the same material; the legs and wings can be adjusted to fit any ordinary size of grate. The object of the apparatus is to keep the ground-draught and door-draught from chilling the source of heat, while at the same time the radiant energy which would otherwise pass to the floor is reflected into the room. For rapidly warming the part of a room opposite the fire this apparatus is very effective. It suffices for this purpose to turn the gas on nearly full for a few minutes, and then turn it down to half pressure or less. Incidentally, the tray forms an excellent means of keeping breakfast dishes hot. The main drawback of the apparatus seems to be its tendency to heat the upper layers of the room atmosphere whilst leaving the carpet and lowest level of air relatively cold. Thus it appears better suited for temporary than prolonged use. We understand that the appliance can be obtained from William Gowland, Ltd., manufacturing opticians, of Morland Road, Croydon.

PETROL LICENCE REFUNDS.

THE Automobile Association states that the Petrol Control Department, which has been kept open for some time for the purpose of dealing with refunds, is understood to be finally closing down on October 30th. After that date no further refunds, in respect of duty on the licences which were issued when supplies were restricted, will be paid. Any motorist who has not yet claimed refund on his unexpired petrol licence, should immediately forward the licence with a formal request for the refund, to the Petrol Control Department, c/o Patents Office, 25, Southampton Buildings, Chancery Lane, W.C.2.

WOMEN HEALTH VISITORS.

IN commenting last November on the regulations for the training of women health visitors drawn up by the Board of Education at the request of the Ministry of Health we ventured to say that time only would tell whether they would prove satisfactory in practice. It was pointed out that the course of training was for women health visitors whose greatest qualification should be the possession of womanly sympathy and consideration, and that it was possible to lay too much stress upon the scientific training and methods where practical knowledge and sympathy were more needed. We understand that a good deal of dissatisfaction with the regulations has arisen, and that a deputation from the National Health Society will wait upon the Medical Department of the Ministry of Health on October 26th to explain some practical difficulties that have been encountered.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 36, 39, 40, 41, 42, 43, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 37, 38, and 39.

THE appointment of certifying factory surgeon at St. Andrews (Fife) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.